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REVISED SYSTEM OF NATIONAL ACCOUNTS

CHAPTER XV

SUPPLY AND USE TABLES AND INPUT-OUTPUT

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XV. SUPPLY AND USE TABLES AND INPUT-OUTPUT

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XV. SUPPLY AND USE TABLES AND INPUT-OUTPUT

List of Acronyms

c.i.f.	cost insurance freight
CPC	Central Product Classification
CPI	Consumer Price Index (Indices)
f.o.b.	free on board
GDP	gross domestic product
ISIC	International Standard Industrial Classification
NPI	non-profit institution
SAM	social accounting matrix
UHP	unit of homogeneous production
VAT	value added tax

XV. SUPPLY AND USE TABLES AND INPUT-OUTPUT

A. Input-Output in the System

1. Introduction

1. The System includes an integrated set of supply and use tables, or matrices, as well as symmetric input-output tables, or matrices. They provide a detailed analysis of the process of production and the use of goods and services (products) and the income generated in that production. The concepts and definitions in the input-output tables of the SNA are the same as in the rest of the System.

2. The integration of "input-output" in the overall system of national accounts is an important feature of the revised SNA. Its role in the System is primarily related to the goods and services accounts and to the shortened sequence of accounts for industries. In complement to the full sequence of accounts for institutional sectors, which cut across all kinds of accounts in the System, the supply and use tables, and subsequently the symmetric tables, serve the purpose of a more detailed basis for analysing industries and products in the System through a breakdown of the Production Account and the Generation of Income Account in the System, the Goods and Services Account leading to the symmetric Input-Output Table. By symmetric is meant there are the same number of products and industries when each industry is defined in terms of its principal product.

3. The input-output tables and in particular the supply and use tables serve two purposes: statistical and analytical. They provide a framework for checking the consistency of statistics on flows of goods and services obtained from quite different kinds of statistical sources - industrial surveys, household expenditure inquiries, investment surveys, foreign trade statistics, and so on. The System, and the input-output tables in particular, serves as a coordinating framework for economic statistics, both conceptually for ensuring the consistency of the definitions and classifications used and as an accounting framework for ensuring the numerical consistency of data drawn from different sources. The input-output framework is also appropriate for calculating much of the economic data contained in the national accounts and detecting weaknesses. This is particularly important for the decomposition of values of flows of goods and services into prices and volumes for the calculation of an integrated set of price and volume measures. As an analytical tool input-output data are conveniently integrated into macro-economic models in order to analyse the link between final demand and industrial output levels. Input-output analysis also serves a number of other analytical purposes or uses.

4. This chapter has three main parts or stages:

(1) goods and services accounts;

(2) supply and use tables;

(3) analytical input-output tables.

5. A fundamental and extremely important role is played in the System by the Goods and Services Account. In fact, this is the basis from which the supply and use balances are derived. It shows for the economy as a whole and for groups of products the total resources in terms of output and imports, and the uses of goods and services in terms of intermediate consumption, final consumption, gross capital formation and exports. By then incorporating also the Production and Generation of Income Accounts of the System, an overall accounting framework is obtained for depicting the production sphere by the construction of integrated supply and use tables.

6. The symmetric input-output tables are also considered part of the System, serving as a well-established tool for various analytical purposes related to production. Many analyses require adjustments to the supply and use table, in particular with respect to valuation, treatment of imported products and common classification for rows and columns.

7. While supply and use tables are data-oriented in nature, the symmetric tables are always constructed from having made certain analytical assumptions, usually from existing supply and use tables. The System recommends that the statistical supply and use tables should serve as the foundation from which the analytical input-output tables are constructed. This explains the wide coverage given to the description of supply and use tables in the chapter, while the more technical description of constructing symmetric input-output tables will mainly be shown in the Handbook on Input-Output Tables.

2. The input-output context

8. In national accounting and economic analysis two kinds of input-output tables (or matrices) are referred to:

(1) supply and use tables;

(2) symmetric input-output tables.

9. The supply and use tables are sometimes referred to as rectangular input-output tables, make and use tables, supply and disposition of commodities, etc. In the System, we shall use the term supply and use tables. The symmetric input-output tables are also often termed square (input-output) tables or matrices, Leontief-type input-output tables (matrices), etc. The square symmetrical tables are either product-product or industry-industry (producer-producer). In this chapter we shall be referring to tables rather than matrices, and to product-by-product tables and industry-by-industry tables.

10. The concepts and definitions in the supply and use tables are the same as elsewhere in the System. This applies in particular to transaction categories defined in a number of chapters. Most of the contents of <chapter

VI, The Production Account> have direct relevance to this chapter. The same is true for the Generation of Income Account with components of value added (<chapter VII, Primary Distribution of Income Accounts>), <chapter IX, Use of Income Account> describing final consumption expenditure and actual final consumption, <chapter X, The Capital Account> on gross capital formation and <chapter XIV, The External Account> on exports and imports flows.

11. The supply and use and input-output tables also adopt the accounting rules of the System, i.e., the general rules of treatment for transactions and transactors apply to the input-output framework as part of the System. <Chapter III, Transactions and Accounting Rules> contains a number of issues that become crucial in the input-output framework, in particular valuation, and which therefore need further elaboration.

12. Other issues of great importance to the input-output framework, dealt with in other chapters as well, include in particular:

- statistical units (<chapter V, Establishments and Industries>), among which establishments grouped in industries serve as a common basis for the Production Accounts and the supply and use tables, while using institutional units is not recommended for input-output compilation;

- principal, secondary and ancillary activities (<chapter V, Establishments and Industries>), the distinction between which in particular plays a role in the compilation of the symmetric tables;

- constant-price estimation (<chapter XVI, Price and Volume Measures>), for which an entire set of price and volume measures, including for balancing items defined in the System (value added, gross domestic product (GDP)), might be derived by using the supply and use tables as a framework;

- <chapter XX, Social Accounting Matrices> (SAMs), in which the supply and use table is regarded as one SAM building-block;

- employment measures (<chapter XVII, Population and Labour Inputs>), the use of which is important to productivity studies.

3. Statistical units for input-output

13. Institutional units may engage in several different kinds of productive activities simultaneously. For the detailed analysis of production, the System, therefore, recommends that they should be partitioned into separate establishments each of which engages in only a single kind of productive activity at a single location. Industries are then defined as groups of establishments engaged on the same kind of productive activities. Ideally, the industries in the System would be composed of establishments that are

homogeneous production units.

14. A unit of homogeneous production (UHP) is defined as a producer unit in which only a single (non-ancillary) productive activity is carried out. However, the UHP is not normally observable and is more an abstract or conceptual unit underlying the symmetric (product-by-product) input-output tables.

15. The establishment unit needs to be sufficiently distinct as a production unit to achieve from it the meaningful information. For the supply and use tables, the System needs a unit which can be observed and for which data can be collected, i.e., make the establishment operational as a statistical unit. Furthermore, the choice of units might be dictated by the units being carried forward from the basic statistics.

16. When an establishment engages in more than one kind of activity by reference to a given classification of activities, it is necessary to observe the fundamental distinction between principal and secondary activities on the one hand and ancillary activities on the other:

(1) The principal activity of an establishment is the activity whose gross value added exceeds that of any other activity carried out within the same unit.

(2) A secondary activity is an activity carried out within a single establishment in addition to the principal activity.

(3) An ancillary activity is a supporting activity which is undertaken in order to create the conditions within which the activities of an enterprise can be carried out.

17. The establishment unit used for the sequence of accounts for industries may include principal as well as secondary productive activities within it, although secondary activities should be separated as far as practically possible. The further treatment of secondary production is one of the central issues met in the construction of symmetric input-output tables.

18. Ancillary activities typically produce outputs of services which are used as inputs into almost all kinds of productive activities, the values of which are likely to be small compared with that of the principal and secondary activities of the enterprise. Consequently, they are treated as integral parts of the principal or secondary activities with which they are associated. In a production account and input-output context, ancillary activities are treated as follows:

(1) Outputs of ancillary activities are not explicitly recognized and recorded in the System.

(2) Inputs into ancillary activities are treated as inputs into the principal and secondary activities which they support.

(3) Value added is not identified separately as it is combined with that of the principal and secondary activities. However, satellite analysis might try to identify inside the producing units some ancillary activities and their output.

19. In addition, output of an industry may include more than a single product when two or more products are produced simultaneously by a single productive activity as "joint products" (e.g., molasses linked to the production of sugar, natural gas linked to crude oil). Joint products may be distinguished as the principal product (by largest proportion) and the by-product (or by-products). In practice, by-products are treated in the same way as secondary products in the input-output framework.

B. Disaggregation of Goods and Services Account

1. Goods and Services Account

20. The Goods and Services Account shows, both for groups of products and for the total economy, how the total amount of a product available (supply) is equal to the total amount used. Before additional terms necessary for valuation are introduced, the main items of this basic equation (balance) are as follows:

Output + Imports (= Total resources) = Intermediate consumption + Exports + Final consumption + Gross fixed capital formation + Changes in inventories (= Total uses).

21. Goods and services are traced through the economy from their original producers (either domestic producers or producers abroad) to their users (either domestic users or users abroad).

22. Compiling detailed flows is traditionally referred to as the commodity-flow method, utilizing basic statistics on goods and services (products) with the additional items required for the proper valuation. The full power of the commodity-flow method is reached when independent estimates could be made for each of the use items, i.e., when specific information establishes the basis of the distribution of the supply of products to the various kinds of uses. Reconciliation of the supply and use side of the equation is necessary. In some cases, the commodity-flow method is necessarily less sophisticated, when one of the uses (e.g., changes in inventories, gross fixed capital formation or even final consumption) has to be derived residually, or the distribution to users - fully or partly - has to be made in fixed proportions without enough direct information on or from users.

23. The product groups constitute the rows of the disaggregated supply and use table. The product classification scheme recommended by the United Nations Statistical Commission for classifying data on goods and services is

the Central Product Classification (CPC). It should be applied at a detailed level; the more detailed, the cleaner the view (and the less product mix). The CPC contains more than 1800 products at its 5-digit level. For application in the national accounts, each country may best choose the aggregate level to follow. One possibility for those lacking the full benefit from the commodity-flow approach might be to use the intermediate 3-digit level of the CPC, counting some 300 products. Countries compiling goods and services accounts to-day apply quite different targets of details, the most detailed counting several thousand products.

24. In order to keep the tables presented in the SNA within a manageable format, the breakdown of product groups as they appear in the supply and use table mainly refers to the 1-digit CPC classification. However, these aggregated product groups are illustrative only. The provisional CPC product classification is nevertheless recommended (subject to later revisions). Furthermore, in input-output work it may be necessary to group products according to the activity to which they relate.

2. Valuation and appropriate treatment of taxes and margins

a. Valuation concepts and their interrelationships

25. Before moving into the format of the supply and use table, the basic valuation concepts of the System and their interrelationships need to be spelt out.

26. The components of the price paid by the purchaser of a product that are recognized in the System are the following:

- Basic price of the product as output;
- Taxes on the product;
- Less Subsidies on the product;
- Trade and transport margins in delivering the product to the purchaser.

27. Some of these four components could be subdivided, for example to treat trade and transport margins in a more decomposed way, including to split the margins into wholesale and retail components, or to specify the value added tax (VAT) as a separate component. However, the input-output framework of the System needs as a minimum the specification of the four components. Two clarifications should be made:

(1) Trade and transport margins also bear taxes less subsidies on the product linked to the trade and transport margins.

(2) Trade and transport margins are also services which have a basic value.

28. The three central price concepts of the System - the purchasers' price, the producers' price and the basic price - have been defined in <chapter VI, The Production Account>, but are repeated here for the sake of convenience in the development of the chapter:

(1) The purchasers' price is the price paid by the purchaser, excluding any deductible VAT, in order to take delivery of a good or service at the time and place required by the purchaser. It includes any transport charges paid separately by the purchaser (to the transportation unit) to take delivery of a good at the required time and place.

(2) The producers' price is the price received by the producer for a unit of a good or service produced as output, including any tax payable or excluding any subsidy receivable on the product as a consequence of its sale or use (by the producer) except invoiced VAT. It excludes any delivery charges invoiced separately by the producer.

(3) The basic price is the price received by the producer for a unit of a good or service produced as output, excluding any tax payable or including any subsidy receivable on the product as a consequence of its sale or use. It also excludes any delivery charges invoiced separately by the producer.

29. There are definitional relationships between these three price concepts which have a central role in the input-output framework:

(1) Purchasers' price - Trade and transport margins (including taxes less subsidies paid/received by wholesale or retail stages) = Producers' price

(2) Producers' price - Taxes less subsidies on product (by their producers) = Basic price

30. The treatment of changes in price of a product during storage (holding gains or losses) is described in the section on trade and transport margins.

31. Producers' and purchasers' prices must in general coincide for services production, as services are supplied directly from the producer to the user. If, in fact, retailers exist in the services' area (like travel agencies in tourism), the price equality still holds, since the System by convention treats these retailers as producing services other than trade services. When goods are purchased directly from their original producers, the two prices will also tend to coincide in many cases, but there could be cases of transport margins as well. At any rate, the distinction between the purchasers' price and the producers' price is mainly relevant for goods which

pass through the chains of wholesale and retail distribution.

b. Valuation of product flows

32. <Chapter VI, The Production Account> includes a comprehensive description of the valuation and the measurement of output, so it is sufficient here to refer to the main points that are very important in the input-output framework. The System recognizes two kinds of prices for output, both defined to exclude any VAT or similar deductible tax invoiced on the output sold:

- basic prices;
- producers' prices.

33. The preferred method of valuation is at basic prices. Producers' prices may be used when valuation at basic prices is not feasible. The preference for basic prices over producers' prices is based on several considerations, of which the following may be emphasized:

(1) Basic prices provide the most homogeneous valuation along the rows.

(2) Basic prices are found most useful when a system of VAT or similar deductible tax is in operation.

(3) Basic prices record the income available to the producer.

34. Uses of goods and services - both intermediate consumption and final uses - are recorded at purchasers' prices (i.e., including the margins and taxes less subsidies on products except deductible taxes).

35. For exports and imports, the System adopts analogous price concepts: the free on board (f.o.b.) price for exports and total imports and the cost, insurance and freight (c.i.f.) price for detailed imports. The difference between the f.o.b. price and the c.i.f. price represents the costs of transportation and insurance between the frontier of the exporting country and the frontier of the importing country. The definition of the c.i.f. price is as follows:

> The c.i.f. price is the price of a good delivered at the frontier of the importing country, or the price of a service delivered to a resident, before the payment of any import duties or other taxes on imports or trade and transport margins within the country.

36. The f.o.b. price is considered to be a special purchasers' price applied to flows of exports. The c.i.f. price is considered to be a basic price applied to flows of imports, equivalent to the basic price of a domestically produced good or service. The valuation of an imported good or service which

is equivalent to the producers' price of a domestically produced good or service is the total of the c.i.f. price and any import duty and excise duty or special tax levied on imported products (sometimes referred to as the ex-customs price). This equivalence holds as well between producers' price excluding invoiced VAT and the c.i.f. price plus taxes and duties on imports, excluding VAT.

37. The implicit valuation of value added depends on the valuation of its two constituents output and intermediate consumption. While intermediate consumption is always valued in purchasers' prices (in total, excluding deductible VAT), two alternative valuations result in the System for the combination of the two concepts:

(1) gross value added at basic prices defined as output valued at basic prices less intermediate consumption valued at purchasers' prices;

(2) gross value added at producers' prices defined as output valued at producers' prices (excluding invoiced VAT) less intermediate consumption valued at purchasers' prices.

38. The measure recommended throughout the System and reflected in the supply and use table, is gross value added at basic prices. In order to arrive at GDP at market prices, taxes less subsidies on products - not being allocated to industries - must be added to total gross value added at basic prices. If output and thus value added were at producers' prices, non-allocated VAT (and taxes less subsidies on imports) must be added to arrive at GDP at market prices.

39. Gross value added at factor cost is not a concept used explicitly in the System. Nevertheless, it could be derived from gross value added at basic prices by subtracting other taxes less subsidies on production. However, this item is not recommended as a measure of value added in the System, since it is not easy to find prices such that output minus intermediate consumption equals gross value added directly in this case. Other taxes less subsidies on production, by definition, are in fact taxes or subsidies that cannot be eliminated from the prices of outputs and inputs. Therefore, gross value added at factor cost is essentially a measure of income and not output. In the input-output framework, it means that neither the output entries in the supply table nor the values added in the use table are given at factor cost.

c. Trade and transport margins

40. It is emphasized in <chapter VI, The Production Account> that input-output analysis - and the commodity flow method - would find it convenient to compare the price by the final purchaser of a good after it has passed through the wholesale and retail distribution chains with the price received by its original producer. Differences between price concepts were explained in sub-section 2.a. above. The trade and transport margins include the two

components:

(1) the trade and transport margin on the product, i.e., the cumulative wholesale and retail trade margins including both trade and transport components, also including transport charges paid separately by the purchaser in taking delivery at the required time and place;

(2) taxes less subsidies on the product payable by wholesale and retail traders.

41. The output of wholesale and retail trade is measured by the value of the trade and transport margins realised on the goods they sell. Goods resold are not included at their full transaction values, neither in the output nor the inputs of wholesale and retail trade.

42. A considerable share of transportation costs is included in the margins by not having to identify separately the transportation and storage costs incurred by wholesalers and retailers. Higher price after storage might be due to additional output volume during storage (e.g., increase in physical qualities) or to holding gains (for further discussion, see <chapter VI, The Production Account>). As regards transportation of goods, the following constituent items might serve to clarify its treatment in the input-output framework:

(1) produced by producers, but not separated:

a. producers of goods (ancillary, not explicitly recognized as output);

b. wholesale and retail traders (ancillary, not explicitly recognized as output);

(2) produced by producers, but separately invoiced:

a. producers of goods (output of secondary transport services in basic prices);

b. transportation producer units (included in output as trade and transport margin);

c. wholesale and retail traders (included in output as trade and transport margin).

43. In order to fit in with the input-output framework, data on margins should have the format of products by uses as in table XV.2, Table of Trade and Transport Margins, Taxes and Subsidies on Products. These data might have been originally compiled at some industry level of wholesale and retail trade, from which the conversion to the appropriate format has to be made.

44. In the supply table, output of goods is at basic prices, and the associated trade services and transport services are given at basic prices in their respective columns and rows. Trade and transport margins are additionally distributed by products in the additional column of trade and transport margins of the supply table. In that column, negative entries appear on the rows for trade and transport services in order to have the total of that column equal to zero. In purchasers' prices, total supply of trade services does not include trade margins, nor does total supply of transport services include transport margins; both of these having been allocated to the goods to which they relate.

d. Taxes and subsidies on products

45. Different valuation concepts in the input-output framework to a large extent are consequences of treatments of taxes and subsidies. As already seen (<<paragraph 29>>), taxes less subsidies on products make up part of the difference between the purchasers' price and the basic price.

46. The taxes that appear in the input-output framework are all taxes on production and imports. These are taxes levied on goods and services at the time they are produced, sold or imported, or possibly on other occasions, together with taxes which become due as a consequence of engaging in production. Taxes on production and imports are subdivided into two main groups:

(1) taxes on products;

(2) other taxes on production.

47. The separation of taxes on products from other taxes on production is very important in varying valuations of product flows. Taxes on products are defined as follows (with the four constituting sub-categories):

A tax on a product is a tax that is payable per unit of some good or service, either as a specified amount of money per unit of quantity or as a specified percentage of the price per unit or value of the good or service transacted.

(1) A value added type tax is a tax on goods or services collected in stages by enterprises but which is ultimately borne by the final purchasers.

(2) Taxes and duties on imports, excluding VAT, consist of taxes on goods and services that become payable at the moment when these goods cross the national or customs frontiers of the economic territory or when those services are delivered by non-resident producers to resident institutional units.

(3) Export taxes consist of taxes on goods and services that

become payable when the goods leave the economic territory or when the services are delivered to non-residents.

(4) Taxes on products, excluding VAT, and import and export taxes consist of taxes on goods and services produced as outputs of resident enterprises that become payable as a result of the production, sale, transfer, leasing or delivery of those goods and services, or as a result of their use for own consumption or own capital formation.

48. Value added type taxes in the System include VAT proper and taxes which are deductible in a way similar to VAT and are treated in the same way as VAT. They are defined and described as follows (see also <chapter VI, The Production Account>):

VAT is a tax on products collected in stages by enterprises but which is ultimately borne by the final purchasers of the goods or services produced. There exist in some countries taxes that are narrower in scope than VAT but may also be deductible by producers. They are treated in the System in the same way as VAT. Producers are required to charge certain percentage rates of VAT on the goods or services they sell. The VAT is shown separately on the sellers' invoices so that purchasers know the amounts they have paid. However, producers are not required to pay to the government the full amounts of the VAT invoiced to their customers because they are usually permitted to deduct the VAT that they themselves have paid on goods and services purchased for their own intermediate consumption or gross fixed capital formation. Producers are obliged to pay only the difference between the VAT on their sales and the VAT on their purchases for intermediate consumption or capital formation - hence the expression value added tax. VAT is not usually charged on sales to non-residents - i.e., exports. The percentage rate of VAT is also liable to vary between different categories of goods and services and also according to the type of purchaser.

49. The System recommends the use of the so-called net system of recording VAT. In this net treatment, output even at producers' prices is valued excluding VAT invoiced by the producer; imports also are valued excluding invoiced VAT. For intermediate and final uses the purchases of goods and services are recorded including non-deductible VAT only.

50. VAT may be deductible, non-deductible or just not applicable as follows:

Deductible VAT:

- most of intermediate consumption;
- most of gross fixed capital formation;
- part of changes in inventories

Non-deductible VAT:

- final consumption expenditure;
- part of fixed capital formation;
- part of changes in inventories;
- part of intermediate consumption.

VAT not applicable:

- exports;
- any goods or services exempted from VAT (zero rate) regardless of their use;
- any producers exempted from VAT registration (small businesses or the like).

51. Depending on the tax regimes in countries, the contents of the tax column in the supply table would be as follows:

Absence of VAT:

- When output is at basic prices, the taxes column will contain all taxes on products (excluding export and import taxes) and taxes and duties on imports of similar products.

- When output is at producers' prices, it will include just taxes and duties on imports.

Presence of VAT (net treatment):

- When output is at basic prices, the taxes column will contain taxes on products (excluding VAT, export and import taxes) and taxes and duties on imports (excluding VAT), plus total non-deductible VAT on those products.

- When output is at producers' prices, the taxes column will include taxes and duties on imports (excluding VAT), plus total non-deductible VAT on those products.

52. Subsidies are treated as if they were negative taxes on products or negative taxes on production. In the System, subsidies are current unrequited payments that government units make to enterprises on the basis of the levels of their production activities or the quantities or values of goods and services which they produce, sell or import. They are classified in the same way as taxes:

(1) subsidies on products;

(2) other subsidies on production.

53. The separation of subsidies on products from other subsidies on

production, as in the case of taxes, is fundamental to the valuation of product flows. Subsidies on products are defined as follows:

> A subsidy on a product is a subsidy payable per unit of a good or service produced, either as a specific amount of money per unit of quantity of a good or service or as a specified percentage of the price per unit. It may also be calculated as the difference between a specified target price and the market price actually paid by a buyer.

C. Supply and Use Table

1. Format of the supply and use tables

54. The recommended supply and use tables of the System are presented in table XV.1, Supply and Use. An early reference is given to the supply and use tables in <chapter II, Overview>, using a reduced format. This reduced format (table II.5) is used in <chapter II, Overview> in order to introduce the overall structure of the supply and use tables. It is not a simplified version of the latter.

55. As emphasized already, the level of details in the rows and columns of the Supply and Use and Input-Output Tables should be reasonably disaggregated, while the tables presented in this chapter are very aggregated in order to keep a manageable format. That applies to the breakdown of products, of industries, of final uses as well as value added components. In this sense, the tables of the chapter are both recommended tables and illustrative tables.

56. The supply and use tables show the following information.

(1) Table XV.1 S shows the supply of products.

(2) Table XV.1 U shows

(a) the use of products along the rows;

and

(b) the production and generation of income accounts of industries down the columns.

57. The supply table for the main part is at basic prices, but there are columns added so as to arrive at total supply at purchasers' prices in order to balance with the use table at purchasers' prices. In general, when preparing supply and use tables and making the proper balancing between the two sides, there is always a choice of emphasis between two opposite lines of adjusting statistical data:

(1) Supply of each product at basic prices could be adjusted to a

purchasers' prices valuation to allow balancing with uses at purchasers' prices.

(2) Each of the uses at purchasers' prices could be adjusted to a basic prices' valuation to match with supply at basic prices.

58. In practice, both types of balances may be needed in the process of building up a supply and use table. Both alternatives deal with or require similar kinds of adjustments, i.e., for taxes less subsidies on products and trade and transport margins by products. In fact, the first alternative is not possible without the second. It is usually not possible to know the columns of taxes on products, subsidies on products and trade and transport margins broken down by products in the supply table unless the distribution among users of the individual products are known from table XV.2.

59. Thus, three tables are involved in the balancing between supply and use of products:

Table XV.1: Supply and Use

the supply and use table, showing the final results of the balancing in totals of supply and totals of use by products at purchasers' prices;

Table XV.2: Table of Trade and Transport Margins, Taxes and Subsidies on Products

a supporting table in the same format as the intermediate use and final use quadrants of the use table;

Table XV.3: Use Table, Basic Prices

an alternative use table at basic prices, in which the elements of the supporting table just mentioned are deducted and reorganized from the elements of the initial use table (<for presentation, see section D.2>).

2. The supply table

a. Introduction

60. The supply table of the System (table XV.1 S) gives information about the resources of goods and services. For pedagogical reasons, its layout is arranged in the same way as in the use table (XV.1 U), i.e., showing products in rows and industries in columns. In the rows, the various types of products are presented according to CPC classification groups. Additional rows for two adjustment items are required for reasons of valuation, one for the c.i.f/f.o.b. adjustment on imports and one for direct purchases abroad by

residents. In the columns, three different sets of information are set out:

(1) output, by industries according to the activity classification International Standard Industrial Classification (ISIC), Rev.3 and broken down to distinguish market output from non-market output and showing the product breakdown of industries' output by CPC sections;

(2) imports, broken down into goods and services respectively;

(3) adjustment items, i.e., one additional column for trade and transport margins and one each for taxes and subsidies on products, plus one additional column for the c.i.f./f.o.b. adjustment.

61. The supply table cannot be compiled independently, since table XV.2 has to be prepared before completing table XV.1 S. Before adding in additional columns for trade and transport margins and taxes and subsidies on products, total supply is shown at basic prices. When including the additional columns - which have to be calculated from the use format as given by table XV.2 - total supply is shown at purchasers' prices.

b. Output of market and non-market producers

62. The format of the table, industries by products, is usually (but not necessarily) rectangular, with more rows (products) than columns (industries).

63. The level of industry details should also be reasonably disaggregated. The ISIC Rev.3 is recommended, while the degree of detail for the industry breakdown is up to the countries to decide. One possibility might be an intermediate level of ISIC Rev.3 (for example the 2-digit level).

64. A distinction is made in the System between market and non-market output, which also is carried over into the supply and use table.

65. Outputs of non-market industries are broken down by products in the same way as for outputs of market industries, thereby making possible an integrated exposition of product data in the System. For instance, it makes it possible to add together outputs of health services or education services from both market and non-market industries to arrive at output totals for these groups of services.

66. The valuation of non-market goods and services is special, as non-market output of government and non-profit institutions (NPIs) has no market prices. While some of them may be sold at nominal prices which are well below their average costs of production, such prices are quite arbitrary and cannot be used for the purpose of valuation. By convention, the value which is assigned to the output from non-market production of government units and NPIs is equal to the sum of costs incurred in producing that output:

- intermediate consumption;
- compensation of employees paid;
- consumption of fixed capital;
- taxes less subsidies on production;
- net operating surplus on services of own buildings (see <chapter VI, The Production Account>);

67. For non-market output produced for own final consumption or own gross fixed capital formation, the valuation in terms of total costs should not apply in principle, though it might be a second best procedure in practice. When produced for own final use, the goods and services should be valued at the basic prices at which they could be sold if offered for sale on the market, and it is only when reliable market prices cannot be obtained that the procedure of valuing output equal to the sum of the costs of production might apply. Services of owner-occupied dwellings should also be valued using the prices of the same kinds of services sold on the market. On the other hand, most often the valuation of output of own-account construction has to be based on costs. For services produced by employing paid domestic servants, there is a convention to value output as equal to the compensation of employees paid.

c. Imports recorded c.i.f. and f.o.b.

68. In the System, total imports are valued f.o.b. However, data on detailed flows of imports from foreign trade statistics are most usually valued in c.i.f. prices. To reconcile the different valuation used for total imports and the product components of imports, a global c.i.f./f.o.b. adjustment on imports is added.

69. The recording in the supply table of imports and the c.i.f./f.o.b. adjustment item is as follows:

(1) Imports of goods detailed by products are valued c.i.f.

(2) Transport and insurance services on imports, provided by both resident and non-resident producers, which are included in the c.i.f. value of imports by products, are globally deducted (see column for imports of goods and row for the c.i.f./f.o.b. adjustment on imports). Thus, the total of imports of goods in the System is always recorded f.o.b. in the table.

(3) Transport and insurance services on imports, provided by non-resident producers, are recorded under imports of services (part of the entries on rows for transport services and business services in the imports of services column).

(4) Transport and insurance services on imports, provided by resident producers, are included in the output of transport and insurance services for the relevant industries (part of the entries on rows for transport services and business services in the output columns of the respective industries).

(5) The domestic and imported supply of transport and insurance services on imports - i.e., (3) and (4) above - is not conveyed to users as transport and insurance services because the value of these services on imports is already included in the c.i.f. value of imports of goods and services and therefore not to be included in total supply of transport and insurance services. Thus, transport and insurance services on imports provided by resident and non-resident producers must be deducted from the total supply in the supply table (in the column of the c.i.f./f.o.b. adjustment on imports on the rows for transport services and business services).

(6) These services are recorded on the c.i.f./f.o.b. adjustment row, making row and column totals of the adjustment item equal to zero.

70. The parallel treatment to producers' prices would be to record details of imports at c.i.f. prices plus taxes and duties on imports, excluding VAT. These prices - referred to as ex-customs prices - may be useful for certain types of analysis. The System does, however, not recommend such parallel treatment at ex-customs prices, not even in the circumstance of recording domestic output flows at producers' prices.

3. The use table

a. Introduction

71. The use table of the System (table XV.1 U) gives information on the uses of goods and services, and also on cost structures of the industries. It is convenient to refer separately to the use table having three quadrants (the fourth "quadrant" in this presentation being empty):

(I) the intermediate use quadrant;

(II) the final use quadrant;

(III) the value added components quadrant.

72. The intermediate use quadrant shows intermediate consumption at purchasers' prices by industries in the columns and by products on the rows. The total row shows intermediate consumption by industries at purchasers' prices. No separate entries of trade and transport margins, taxes or subsidies on products would be needed in this quadrant due to the valuation at

purchasers' prices in which they are embodied. As explained elsewhere, the purchasers' prices are net of deductible VAT, but may include some non-deductible VAT. As regards the format (number of industries and products) of the intermediate use quadrant, it is identical to other format features within the supply and use table:

- to the format of the output part of the supply table in terms of products and industries;

- to quadrant II format in terms of products;

- to quadrant III format in terms of industries.

73. The final use quadrant shows exports, final consumption expenditure and gross capital formation at purchasers' prices - with some further subdivision of final uses in the columns - each classified by products on the rows. The total row shows final use by use categories at purchasers' prices, including non-deductible VAT. The purchasers' prices reflect the observable market price for the entries of the final use quadrant. Exports f.o.b. are considered equivalent to purchasers' prices.

74. The value added components quadrant shows those production costs of producers other than intermediate consumption (purchases of goods and services are shown in quadrant I). The main value added components are the following:

(1) compensation of employees;

(2) taxes less subsidies on production and imports broken down into taxes on products, subsidies on products and other taxes less subsidies on production;

(3) consumption of fixed capital;

(4) mixed income and net operating surplus.

75. The sequence of accounts for industries is readily recognized. For each industry, its output (by products) appears in the supply table; then intermediate consumption (by products), and finally, gross value added and the components of value added can be seen in the use table. The column for the total economy records the corresponding information at that aggregate level. In this column, rows on taxes and subsidies on products also bring together the non-allocated part from the respective columns of taxes and subsidies on products. Thus, it is possible to find GDP directly in the use table, as the entry on the row for total gross value added/GDP in the column for total economy.

76. Consumption of fixed capital may be difficult to calculate by industry. The value added quadrant therefore shows as an alternative gross operating surplus and gross mixed income.

77. Appended to the value added components quadrant - not considered part of it, but rather as conveniently located - three rows provide additional information on industries' inputs:

- gross fixed capital formation;
- stocks of fixed assets;
- labour inputs.

b. Breakdown of uses

78. Intermediate consumption is broken down by the same industries as for output (<<see paragraph 63 above>>).

79. In the final use quadrant, some breakdowns of the main headings have already been introduced (while further breakdowns can of course readily be introduced if required):

(1) two sub-groups - goods and services - for exports (like for imports);

(2) two sub-groups of government final consumption expenditure: collective consumption expenditure and individual consumption expenditure;

(3) three sub-groups of gross capital formation: gross fixed capital formation, changes in inventories and acquisition less disposals of valuables.

80. For exports (and imports) the countries may establish reasonably detailed sub-classifications (in columns). As in the supply table, for direct purchases abroad adjustment rows are added to the product details in the final use quadrant (although a breakdown by products might be provided if data were to be available):

(1) direct purchases abroad by residents added in total in the column for final consumption expenditure by households;

(2) direct purchases in the domestic market by non-residents added in exports of goods and exports of services and deducted from final consumption expenditure by households.

81. Final consumption expenditure is initially attributed to the institutional sectors that bear the costs: households, NPIs, government. Government final consumption expenditure is further subdivided between expenditure incurred by general government on individual consumption goods and services and on collective consumption services.

82. Actual final consumption is the parallel alternative consumption concept in the System, defined in terms of acquisitions rather than expenditures. Actual final consumption of general government is simply equal to its collective consumption expenditure. Actual final consumption of households is not shown explicitly in the final use quadrant, but can be derived simply by adding together three columns presented there:

(1) households' final consumption expenditures (including any partial payments by households when goods and services from government and NPIs are not completely free);

(2) the expenditures incurred by NPIs (all considered individual, net of any partial payments by households when the goods or services are not completely free);

(3) the individual consumption expenditure of government (net of any partial payments by households when the goods or services are not completely free).

83. Final consumption expenditures by general government and NPIs include not only government and NPI non-market output (valued by costs and deducting values of any receipts from sales), but also direct purchases of goods and services by government and NPIs that are not channelled through intermediate consumption because they are distributed to the population without any processing.

84. There are three main kinds of gross capital formation in the System and input-output framework:

- gross fixed capital formation;
- changes in inventories;
- acquisitions less disposals of valuables.

85. The main description of these items is given in <chapter X, The Capital Account>. In the input-output framework, these items are separate use categories appearing in different columns and classified by products. Included in the column of gross fixed capital formation are tangible fixed assets - usually described as (new and existing) fixed assets - but also intangible fixed assets, such as mineral exploration, computer software or other originals - and improvements to non-produced assets (e.g., improvements to land). Included in the column of changes in inventories are changes in inventories of materials and supplies, of finished goods, of goods for resale, and work-in-progress, the latter consisting of work-in-progress on natural growth products (plants, trees, livestock, etc.) and work-in-progress on other fixed assets (structures, ships, etc.) and possibly some services. The third category of valuables consists of precious stones and metals (gold, diamonds, etc.), jewellery fashioned out of precious stones and metals, and paintings, sculptures etc. recognized as works of art, that are acquired as "stores of

value" and not for production or consumption.

86. All three categories of gross capital formation are measured net of disposals:

- gross fixed capital formation by the value of its acquisitions less disposals of new or existing fixed assets;

- changes in inventories by the value of additions to inventories less the value of removals from inventories during the accounting period (and also less the value of any current losses of goods held in inventories);

- acquisitions less disposals of valuables.

87. Fixed assets - most important of the three - consist of tangible or intangible assets that have been produced as outputs and are themselves used repeatedly or continuously in other processes of production over long periods of time exceeding at least one year. The time at which gross fixed capital formation is recorded is when the ownership of the fixed assets is transferred to the units that intend to use them in production. This time is generally later than the time when they are produced, and not necessarily the time at which they are put to use.

88. In two general cases, when fixed assets are purchased in instalments and under a financial lease, imputations are made to have a better conformity between the time of ownership change and the time of use in production. In these cases legal ownership may not change until some time after the goods have actually been used in production. In the System, therefore, the user is deemed to acquire the rights of ownership at the time he takes physical possession of the goods and gross fixed capital formation recorded at this point. These imputations certainly lead to a more homogeneous registration of the cost of fixed capital and localization of value added in the input-output framework.

89. An existing fixed asset can be sold and its ownership passes from its original owner to an other. The value of an existing fixed asset has already been included in gross fixed capital formation - or in final consumption expenditure in some instances - of at least one user at some earlier point of time. When ownership of an existing fixed asset is transferred, it is recorded as a positive acquisition for the new owner and as a negative (a disposal) for the previous owner. Two movements should be distinguished in the supply and use tables:

(1) Along the row of that type of capital asset (product) in the final use quadrant:

from gross fixed capital formation of one producer to gross fixed capital formation of another producer the two transactions cancel out;

- from gross fixed capital formation of a producer to final consumption of a consumer;

- from gross fixed capital formation of a resident producer to a non-resident as exports;

- from final consumption of a consumer to gross fixed capital formation of a producer (less likely, e.g., car).

(2) Along the row for gross fixed capital formation by owner (industry) below the value added components quadrant (<<see paragraphs 97 and 98>>):

- gross fixed capital formation from one producer to an other, i.e., recorded as negative gross fixed capital formation by the former and positive gross fixed capital formation by the latter.

c. Value added components

90. The supply and use table adds to the products balances a quadrant which contain the industry breakdown of the balancing item of the Production Account (gross value added/GDP) and the industry breakdown of the items in the Generation of Income Account (the components of value added).

91. Compensation of employees could be subdivided into:

- wages and salaries;

- employers' social contributions, with a breakdown on actual contributions and imputed contributions.

92. Taxes less subsidies might further distinguish value added type taxes, taxes and duties on imports (excluding VAT) and import subsidies, export taxes and export subsidies, and taxes on products, excluding VAT, import and export taxes, and other subsidies on products. Since taxes and subsidies on products are non-allocated items when output is valued at basic prices, a breakdown by industries would only be needed for other taxes less subsidies on production. This latter item might also be split into one part for taxes and another for subsidies.

93. Consumption of fixed capital might be classified by type of fixed assets as for gross fixed capital formation.

94. Mixed income and operating surplus, however, are balancing items which do not call for further breakdown. Mixed income is the term reserved for the balancing item of the Generation of Income Account in respect of production by the household sector (unincorporated enterprises) other than owner-occupiers as producers of housing services.

d. Industry breakdown of gross fixed capital formation, stocks of fixed assets and labour inputs

95. The Production Account, the Generation of Income Account and the Supply and Use Tables include the sequence of accounts for industries from output down to mixed income/net operating surplus. In addition, the industry breakdown is particularly of interest for gross fixed capital formation, stocks of fixed assets and labour inputs, since these data would provide a basis for productivity studies and other kinds of analysis at the industry level.

96. In the input-output framework, two sets of entries for gross fixed capital formation are introduced:

(1) column of gross fixed capital formation in the final use quadrant of the use table broken down by products (type of fixed assets);

(2) row of gross fixed capital formation appended to the value added components quadrant broken down by industries of ownership.

97. As to the chosen format of this industry breakdown, two kinds of clarifications should be made:

(1) The appended row for gross fixed capital formation by industry (and the other two rows) are not part of the value added components quadrant of the use table. It is an additional table that - as a matter of convenience - has been aligned to the other rows of the supply and use tables which give an industry breakdown.

(2) Alternatively - as stated in a footnote to the supply and use table - the column of gross fixed capital formation by product might be broken down by industries (or also by institutional sectors).

98. Below the row for gross fixed capital formation by industry is another row of the use table showing stock of fixed assets by industries.

99. The main contents of fixed assets to be included as capital stock are the following:

(1) tangible fixed assets: dwellings, other buildings and structures, machinery and equipment, and cultivated fixed assets (livestock for breeding, dairy, draught, etc. and vineyards, orchards and other plantations of trees yielding repeat products);

(2) intangible fixed assets: mineral exploration, computor software, entertainment, literary or artistic originals, and other intangible fixed assets.

100. The so-called "perpetual inventory" method is usually employed to obtain estimates of the current values of the gross and net stocks needed for the analysis of production and productivity growth and for balance sheets purposes. In the central framework of national accounts, the stock data should be valued by writing down the current market prices of these assets by the cumulative consumption of fixed capital valued at current replacement costs which has occurred since the time they were acquired for purposes of production. The net basis (i.e., stocks of fixed assets, net) would be consistent with the concepts used in the balance sheet by institutional sectors. However, in order to obtain productivity measures - to match similar data on labour inputs - data on gross stocks of fixed assets by industries are useful as well.

101. <Chapter XVII, Population and Labour Inputs> deals with labour input data, which are required in order to analyse productivity. Several concepts of employment are introduced, in particular the following three measures:

(1) jobs, which are contracts (explicit or implicit) between a person and an institutional unit to perform work in return for compensation (or mixed income) for a defined period or until further notice;

(2) total hours worked, which are the aggregate number of hours actually worked during the period in employee and self-employment jobs;

(3) full-time equivalent jobs, which are total hours worked divided by average annual hours worked in full-time jobs.

102. The choice of labour concept for the input-output framework should be the one that best reflects labour input for the purpose of productivity. Total hours worked is therefore the preferred measure of labour inputs in the System. The concept of full-time equivalent jobs makes an inferior alternative as it often treats part-time work inadequately.

103. Very few countries have so far implemented the concept of total hours worked in the national accounts context. In view of this, the following recommendations might be given for the use table:

(1) for countries providing data on total hours worked: a row broken down by industries for total hours worked in jobs, with a breakdown between employee jobs and self-employed jobs.

(2) for countries not providing data on total hours worked: a row broken down by industries for the number of jobs, with a breakdown on employee jobs and self-employed jobs.

104. If even (2) is impossible to work out, an average number of persons employed might be considered as a second-best proxy, based on as many head counts as possible during the period under consideration, with a breakdown on

numbers of employees and self-employed.

e. Cross-classification of value added components by sectors and industries

105. Both the Production Account and the Generation of Income Account are provided for in the System by institutional sector and by industry. The definitions and valuations of the aggregates are the same.

106. As an establishment always belongs to an institutional unit it is possible to link the production activities of industries and sectors. Output of an institutional unit is equal to the sum of the outputs of the individual establishments of which the institutional unit is composed, thus including deliveries between establishments within the institutional unit (i.e., inter-establishment flows). To clarify relationships and contents of industries and sectors, the System calls for the cross-classification of value added and its components by these two dimensions.

107. The table of value added and its components cross-classified by industries and sectors is essentially the value added components quadrant of the use table broken down also by institutional sectors to become a three-dimensional table.

108. The illustrated figures indicate which are the entries of the three dimensions that usually or mostly appear together. The chapter has already dealt with the correlation between value added components and industries and for some components also the institutional sectors involved. The most interesting correlation at this point is however that between sector and industry:

- Non-financial corporations:
  market industries (most ISIC sections);

- Financial corporations:
  market industries of financial intermediation including insurance and pension funding and activities auxiliary to financial intermediation;

- General government:
  non-market industries of public administration and defence, compulsory social security, education, health and social work, real estate activities, other community and social service activities, etc.; market industries might also occur;

- NPIs:
  non-market industries of education, health and social work, other community and social service activities, etc.; market industries might possibly also occur;

- Households:
  market industries (various ISIC sections) and non-market industries (private households with employed persons, services of owner-occupied dwellings, subsistence production of agriculture etc.).

109. In order to implement the three-dimensional table, it would be a great advantage to have good register capabilities. Furthermore, it might be necessary to make the similar cross-classifications for output and intermediate consumption as well, especially for countries which in general follow the production approach in estimating the GDP.

4. Illustrations of the supply and use table

110. The tables of the input-output framework are all presented with figures for illustration to facilitate the comprehension of their contents. This sub-section of illustrations is meant as a guide to readers who want to make direct references to row and column numbers of the supply and use table.

111. The indications (or notations) used are the following:

X.i.j	=	Entry of row no.i and column no.j
R.i.(j1+ +jN)	=	Row no.i, sum of several columns
C.(i1+ +iM).j	=	Column no.j, sum of several rows

112. For example, total output at basic prices is defined in the supply table as:

X.13.20 = R.13.(10+19) = C.(1+ +10).20 = 3613

which means that the intersection of row 13 and column 20 will give total output at basic prices equal to 3613, alternatively arrived at by taking the sum of columns 10 and 19 on row 13, or the sum of rows 1 through 10 in column 20.

113. To illustrate the contents of the supply table XV.1 S, the following aggregates might be defined from the table with their constituent build-ups:

Total output, market industries =

X.13.19 = R.13.(11+ +18) = C.(1+ +10).19 = 2839

Total output, non-market industries =

X.13.10 = R.13.(6+ +9) = C.(1+ +10).10 = 774

Total output, basic prices =

X.13.20 = R.13.(10+19) = C.(1+ +10).20 = 3613

Total imports of goods and services =

R.13.(23+24) = 499

Total supply, basic prices =

X.13.5 = R.13.(20+23+24) = C.(1+ +12).5 = 4112

Total supply, purchasers' price =

X.13.1 = R.13.(3+4+5) = C.(1+ +12).1 = 4245

114. Likewise, to illustrate the contents of the use table XV.1 U, the following aggregates might be defined from the table with their constituent build-ups:

Total intermediate consumption, market industries =

X.13.19 = R.13.(11+ +18) = C.(1+ +10).19 = 1585

Total intermediate consumption, non-market industries =

X.13.10 = R.13.(6+ +9) = C.(1+ +10).10 = 317

Total intermediate consumption, total industry =

X.13.20 = R.13.(10+19) = C.(1+ +10).20 = 1902

Total exports of goods and services =

R.13.(22+23) = 540

Total final consumption expenditure, total economy =

X.13.24 = R.13.(25+26+27) = C.(1+ +12).24 = 1391

Total gross capital formation, total economy =

X.13.30 = R.13.(31+32+33) = C.(1+ +10).30 = 412

Total national final uses, total economy =

R.13.(24+30) = 1803

Total final uses, total economy =

R.13.(22+23+24+30) = 2343

Total uses, total economy =

X.13.1 = R.13.(20+22+23+24+30) = C.(1+ +12).1 = 4245

115. The illustration of industry flows involves both the supply table XV.1 S and the use table XV.1 U. Since the aggregates of output and intermediate consumption already have been illustrated, emphasis is here on value added and GDP, and the value added components, to illustrate the industry flows (when both tables are referred to, S indicates the supply table and U the use table):

Total gross value added, market industries =

X.14.19 = R.14.(11+ +18) = C.(S13-U13).19 = 1254

Total gross value added, non-market industries =

X.14.10 = R.14.(6+ +9) = C.(S13-U13).10 = 457

Total gross value added, industries, basic prices =

X.14.20 = R.14.(10+19) = C.(S13-U13).20 = 1711

Gross domestic product (GDP) (production approach) =

X.14.21 = R.S13.(3+4+20) - R.U13.20 = 1844

Gross domestic product (GDP) (income approach) =

X.14.21 = C.(15+16+20+21+22).21 = 1844

116. For GDP, in addition to the two illustrations above on the production approach and the income approach, the GDP using the expenditure approach could also be illustrated from table entries:

Gross domestic product (GDP) (expenditure approach) =

X.14.21 = R.U13 (22+23+24+30) - R.S13.(23+24) = 1844

117. For each product and for total economy there is the constraint that total supply equals total use. This is exposed in table XV.1 (S and U) in purchasers' prices:

Total supply, total economy =

R.13.(3+4+20+23+24) = 141-8+3613+392+107 = 4245

Total uses, total economy =

R.13.(20+22+23+24+30) = 1902+462+78+1391+412 = 4245

118. This sets out the basic equation (or balance) of national accounts

aggregates reflected in the goods and services account:

	Output (3613)
+	Imports of goods and services (392+107)
+	Taxes, less subsidies, on products (141-8)
=	
	Intermediate consumption (1902)
+	Exports of goods and services (462+78)
+	Final consumption expenditure/actual final consumption (1391)
+	Gross capital formation (412)

D. Derived and Analytical Input-Output Tables

1. Introduction

119. The remaining part of this chapter relates to making the input-output data even more useful for analysis. While some users might find that in many instances the supply and use table could serve analytical as well as statistical purposes, others traditionally may want to prepare more analytical tables to meet their needs.

120. Supply and use tables certainly can provide the framework for input-output analysis, including the construction of economic models needed for economic analysis. Indeed, increasingly analysts find that there are advantages in starting off directly from the rectangular input-output tables instead of basing the analysis on symmetric input-output tables (see also discussion of framework in <chapter XX, Social Accounting Matrices>).

121. It should also be noted that the supply and use tables - sometimes referred to as statistical supply and use tables - in fact represent an intermediate stage between the basic statistics and the symmetric tables. Although the supply and use tables may have strong ties to data observations and various basic statistics, it is also the case that a series of imputations, reconciliations and other national accounts requirements in fact usually entail considerable and varied compilation work on basic data to complete and balance the supply and use tables.

122. The following considerations might be taken into account - starting from supply and use tables - in order to arrive at useful analytical input-output tables:

(1) Decompose purchasers' prices of uses into basic price, taxes, subsidies, and trade and transport margins, and separately analyse these components.

(2) Distinguish use of imported products from use of domestic

products.

(3) Express rows and columns in the same classification, i.e., direct links (products-to-products or industries-to-industries) rather than indirect (products-to-industries).

123. In order to respond to these requirements, the System recommends the following set of input-output tables to complement the basic supply and use table (table XV.1) and its supporting table on trade and transport margins and taxes and subsidies on products (table XV.2):

Table XV.3 Use Table, Basic Prices;

Table XV.4 Input-Output Symmetric Table, Basic Prices Product-by-product;

Table XV.5 Import Table, Basic Prices (c.i.f.);

Table XV.6 Input-Output Symmetric Table, Basic Prices Product-by-product with imported resources separated from domestic resources.

124. Two important assumptions underlie the static input-output analysis, i.e., the notions of:

- a single technique of production for each product;

- a linear fixed-coefficient production function.

125. In a modern economy with millions of products and techniques, the first assumption would seem highly abstract as one is rather unlikely to find an aggregation of these to properly represent techniques of production.

126. Most analysis requires that transactions between producers and users must be valued as homogeneously as possible. Consequently, the System recommends the use of basic prices in the valuation of both inputs and outputs for input-output analysis. Also valuing final uses at basic prices means that the impact of various uses on outputs valued at basic prices can be estimated. Thereby, for example, differences between various classes of buyers in the rates of taxation are also avoided.

127. The original use tables contain the elements for alternative valuations, i.e., the alternative use table at basic prices can be derived by combining the use table (table XV.1 U) and the supporting table on trade and transport margins and taxes and subsidies on products (table XV.2) - a table showing entries of margins and taxes and subsidies on products embodied in the purchasers' prices of the intermediate use and final use quadrants.

2. The use table at basic prices

128. The use table at basic prices is both an alternative statistical use table and a step towards the conversion to analytical input-output table. Against the first interpretation, it may be noted that intermediate and final uses calculated at basic prices are one step further removed from basic statistics.

129. Table XV.3, Use Table, Basic Prices, presents the use table at basic prices. In a supply and use table at basic prices, the two columns on taxes on products and subsidies on products as part of the supply table (table XV.1 S) become irrelevant. However, (non-deductible) taxes less subsidies on products form an additional row in quadrants I and II for intermediate use and final uses, respectively, as the total uses continue to be valued at purchasers' prices.

3. Distinction between use of domestic and of imported products

130. In the supply and use tables presented so far, imports are shown by products in the supply table, while not distinguished among uses in the use table. In this recording, no information is required on the origin (domestic or foreign) of products used by each sector of demand. The principal disadvantage of this simple method is that in most analyses the impact of a certain level of final demand on domestic production and on imports needs to be assessed separately.

131. There are several ways to treat imports in the input-output framework:

(1) classified by purchasers;

(2) classified into complementary and competitive imports;

(3) make a separate input-output table for imported products.

132. The most comprehensive method is to prepare separate input-output tables for imported and domestic products. The statistical requirements are demanding, but the results make possible a considerable flexibility in the treatment of imports and permit a very clear analysis of the impact of demand on domestic and foreign supplies. When it is useful for analytical and economic policy purposes, such an import table may be established even if a country does not prepare analytical symmetric input-output tables.

133. In the System, it is recommended to use this method in the analytical input-output tables, i.e., make a separate input-output table for imported products. Table XV.5 entitled "Import Table, Basic Prices" (presented later) illustrates this method. This table is given in the same format as the subsequent symmetric product-by-product tables, particularly because of its orientation towards products rather than industries. It may be added that the method also permits the separation of technical coefficients into domestic and

imported components when applied for modelling work.

134. Taking only the column totals of table XV.5, the method of classifying imports by purchasers makes no classification of imports by products. Imports are instead shown in a single row entering into each sector of demand. The disadvantage of this method is that imports are explicitly shown only as margin of the input-output framework and conceals the nature of the imports. It is very likely that this method will require more statistical information than it actually reveals.

135. The latter method might be refined by dividing imports into the two categories of complementary imports and competitive imports. In this case, the effects on domestic production and imports can be more accurately assessed. The decisions on classification may be arbitrary in particular cases and may need revision over time if domestic production ceases or commences. In practice, the compilation usually is more complicated than the definitions of the two categories suggest:

(1) Complementary products are those for which no domestic industry exists, i.e., available only from imports.

(2) Competitive products are those for which there is a domestic industry and which may therefore be either domestically produced or imported.

4. Conversion of the supply and use tables into symmetric tables

a. Kind of amendments to the supply and use table

136. There is a change in format to be made when converting the supply and use tables into symmetric tables. The description that follows refers to the product-by-product dimension, for which the columns of the table refer to inputs into the production of a CPC group. The conversion or transformation can be divided into three steps or amendments to the supply and use table:

(1) allocation of all products in the supply table to the productive activity in which they are principally (characteristically) produced;

(2) rearranging the columns of the use table from inputs into industries to inputs into activities (without aggregation of the rows);

(3) aggregation of the products (rows) of the new use table to the CPC groups recognized in the columns.

137. Step (1), in fact, involves transfers of outputs in the form of secondary products in the supply table. Since secondary products are

specified as ("off-diagonal") entries in the supply table, this kind of transfer would be a comparatively simple matter to do (merely rearrange products in sequences and "move" to diagonal). These secondary products are treated as positive amendments into the activities for which they are principal and not alternatively as negative amendments in the activities in which they are produced.

138. Step (2) is more complicated as the basic data on inputs relate to industries and not to particular products produced in those industries. The kind of conversion to be made here entails the transfer of inputs associated with secondary outputs from the industry in which that secondary output actually takes place to the activity to which they principally (characteristically) belong. In making this transfer, two different approaches might be taken:

- by means of supplementary statistical information;

- by means of mechanical methods.

139. Supplementary statistical information should be utilized as much as possible, i.e., using specific information on inputs required to produce certain kinds of output, in order to separate out inputs relating to a secondary product. Information of this kind is usually incomplete, however. Ultimately it will be necessary to resort to simple mathematical means for making the transfers. Mathematical methods are briefly described in the next section and more elaborated in the Handbook on Input-Output Tables.

140. Step (3) involves the aggregation of the products of the new use table to the activities that generate them according to step (1) and thus results in a symmetric input-output table with dimensions product-by-product. While these amendments start from data based on establishment units, the resulting entries are brought to conform to those of UHPs.

141. The transfer of secondary products may also include the transfer of by-products. When the product produced as a by-product is the principal product of another activity, it may be transferred to that activity, with the inputs assumed to be attributable to the production of the by-product. Splitting off the production of by-products in this way may not be merely difficult, but also rather artificial if they cannot be separated technologically from the process of production in which they are actually produced.

142. In summary, the conversion might be seen as moving from an accounting tool designed primarily to provide a framework within which statistics can be assembled, organised and collated, to an analytical tool which is intended primarily for economic analysis. The two kinds of tool are however not so very different from each other; supply and use tables can also be used themselves for various analytical purposes - and they already involve a lot of adjustments and analytical work - while the symmetric tables impose even stronger accounting constraints on the data, since row and column totals of the input-output table now in the same classification have to be identical for

each product.

b. Adding analytical assumptions to basic data

143. The mathematical methods used when transferring outputs and associated inputs hinge on two types of technology assumptions:

(1) industry (producer) technology, assuming that all products produced by an industry are produced with the same input structure;

(2) product (commodity) technology, assuming that a product has the same input structure in whichever industry it is produced.

144. The importance of the role played by the assumptions depends on the extent of secondary production, which depends on how production is organised in the economy, but also on the statistical units and the industry breakdown in the tables. More secondary production will appear with institutional units than with establishments, and more secondary production will inevitably be found in more detailed tables.

145. On theoretical grounds, which are spelt out in more details in the Handbook on Input-Output Tables, by referring to certain axioms of desirable properties one may come somewhat closer to a choice between these two technology assumptions. On this basis the industry technology assumption performs rather poorly, as being:

(1) highly implausible;

(2) not price invariant, which means that values at current prices are affected;

(3) not scale invariant, due to its fixed market share property, which means that the coefficients that follow may vary without change in technique;

(4) not maintaining financial balance, which means that the axiom of revenue being equal to cost plus value added for each commodity is not met;

(5) the Leontief material balance (total output = input-output coefficients * total output + final demand) is however met.

146. From the same theoretical point of view, the product (commodity) technology model seems to meet the most desirable properties, i.e., the axioms of material balance, financial balance, scale invariance and price invariance. It also appeals to common sense and is found a priori more plausible than the industry technology assumption. While the product technology assumption thus is favoured from a theoretical and a common sense viewpoint, it may need some

kind of adjustment in practice. The automatic application of this method has often shown results that are unacceptable, insofar as input-output coefficients sometimes appear as extremely improbable or even impossible. There even are numerous examples of the method leading to negative coefficients which are clearly nonsensical from an economic point of view. Improbable coefficients may partly be due to errors in measurement and partly to heterogeneity (product-mix) in the industry of which the transferred product is the principal product. Heterogeneity results from working on aggregated data with a high occurrence of non-characteristic products. This might be overcome by making adjustments based on supplementary information, or informed judgement has to be exploited to the fullest extent possible.

147. Further improvement of the input-output tables can be made in the following ways:

(1) Make proper adjustments to the basic data so as to obtain a supply and use table of good quality, since this will mean more to the quality of the symmetric tables than the choice of technology assumption.

(2) Introduce other technology like mixed technology models whenever modifications of the basic input-output model are to be made, however complicated to implement.

148. Finally, it must be said that the question of technology assumption should be viewed against the background of the kind of aggregated data dealt with in the input-output framework. Since input-output tables contain highly aggregated macro data, it is in fact difficult to relate them to micro assumptions of a certain production technology.

5. Symmetric input-output tables

a. Format of the recommended tables

149. Symmetric means having the same dimensions, either product-by-product or industry-by-industry. The product-by-product table shows which products are used in the production of which other products; the industry-by-industry table shows which industry uses the output of which other industry. Since the product-by-product table will often prove most useful, only this table is actually described in details in the Blue Book. It is shown in two versions:

(1) product-by-product input-output table, i.e., table XV.4 entitled "Input-output Symmetric Table, Basic Prices"

(2) product-by-product input-output table separating out the domestically produced part of the product flows from imports. i.e., table XV.6 entitled "Product by product, with imported resources separated from domestic resources".

150. The format of the product-by-product table is the familiar one consisting of three quadrants:

(1) the upper left part, quadrant I on intermediate use, gives the name to the table, as it is shown in the form of product-by-product (i.e., rows were products already, while columns change, actually referring to UHP or homogeneous activities);

(2) the upper right part, quadrant II on final use, has a format close to the corresponding use table, except for imports (see below);

(3) the lower left part, quadrant III on value added components, also has a format close to that of the use table (rows the same, but columns change), while the appended rows of the use table have been deleted.

151. The symmetric tables XV.4 and XV.6, on their rows of quadrants I and II, have kept the same items as of the supply and use table XV.1, i.e., an illustrative product breakdown of 10 groups, plus the three adjustment row items presented before. By nature of the table, the same 10 product groups now appear as columns in quadrant I. The separation of intermediate use into the two main groupings of market and non-market is however not introduced. The columns of exports, final consumption expenditure and gross capital formation in the use table and in the product-by-product table all have more or less the same format. The rows of value added components are almost identical with the use table. Taxes and subsidies on products are not considered components of value added of products (in columns), but are instead introduced as a single entry in order to get GDP at market prices.

152. The GDP can be seen as follows:

(1) GDP from the production approach =
the sum of gross value added by products (homogeneous activities) at basic prices + single item of taxes less subsidies on products, all on row for total gross value added;

(2) GDP from the expenditure approach =
the sum of final uses categories at purchasers' prices (imports counted negative), on row for total uses;

(3) GDP from the income approach =
the sum of gross value added components, in column for total economy.

153. In the first version (table XV.4), imports are deducted in the final use quadrant as negative elements by products (at c.i.f. prices and with a c.i.f./f.o.b. adjustment item to arrive at imports f.o.b.). Product output is the grand total for each row and column.

154. In the second version (table XV.6), the import table (table XV.5) has

been deducted from the intermediate use and final use quadrants of table XV.4, so that they now show only uses of domestic output (by product). The imported component is shown as a separate row at the bottom of that part of the table. This allows studies of the impact of economic events on domestic production and on imports separately. In fact, the imports table XV.5 actually makes it possible to show every cell in quadrants I and II separated by domestic output and imported products, rather than just treating imports globally by uses on a separate row.

b. Illustrations of the product-by-product table

155. To illustrate the contents of the product-by-product tables the same method of illustration is used as for the supply and use table earlier in the chapter. In this case, both entries of the manufacturing product as an example of individual product flows and some of the aggregates are illustrated, for each of the two tables.

156. Illustrations of table XV.4:

Total product output, basic prices =

X.28.11 = R.28.(1+ +10) = C.(16+17).11 = 3613

Manufacturing product output, basic prices =

X.4.25 = X.28.4 = 1721

Total imports =

-X.14.23 = 499

Imported manufacturing product =

-X.4.23 = 283

Total resources, basic prices =

R.14.(-23+27) = 4112

Supply of manufacturing product =

R.4.(-23+25) = 2004

Total resources, purchasers' prices =

R.16.(-23+27) = 4245

Total intermediate consumption, basic prices =

X.14.11 = R.14.(1+ +10) = 1856

Manufacturing product for intermediate consumption, basic prices =

R.4.11 = 925

Total intermediate consumption, purchasers' prices =

X.16.11 = R.16.(1+ +10) = C.(14+15).11 = 1902

Intermediate consumption, manufacturing, purchasers' prices =

X.16.4 = 1074

Total gross value added, basic prices =

X.17.11 = R.17.(1+ +10) = C.(18+ +25).11 = 1711

Gross value added, manufacturing =

X.17.4 = 647

Gross domestic product =

X.17.27 = R.17.(11+26) = C.(18+ +25).27 = 1844

Total national final uses, basic prices =

R.14.(12+18) = 1727

Total final uses, basic prices =

R.14.(12+18+22) = 2256

Manufacturing product for final use, basic prices =

R.4.(12+18+22) = 1079

Total uses, basic prices =

R.14.(11+12+18+22) = 4112

Manufacturing product for total use, basic prices =

R.4.(11+12+18+22) = 2004

Total national final uses, purchasers' prices =

R.16.(12+18) = 1803

Total final uses, purchasers' prices =

R.16.(12+18+22) = 2343

Total uses, purchasers' prices =

R.16.(11+12+18+22) = 4245

157. Illustrations of table XV.6 (not repeating items which are similarly illustrated in both tables):

Total resources, basic prices =

X.13.26 = C.(1+ 12).26 = 4112

Total resources, purchasers' prices =

X.15.26 = C.(13+14).26 = 4245

Domestic output of manufacturing product for intermediate consumption, basic prices =

R.4.11 = 825

Domestic output of manufacturing product for final use =

R.4.(12+18+22) = 896

Total uses, basic prices =

X.13.26 = R.13.(11+12+18+22) = 4112

Domestic output of manufacturing product for total use =

R.4.(11+12+18+22) = 1721

Total uses, purchasers' prices =

X.15.26 = R.15.(11+12+18+22) = 4245

E. Some Aspects of Input-Output Compilation

1. Input-output strategy

158. The supply and use table is both a framework for basic statistics and the foundation from which the analytical input-output tables are constructed. This sets an ambitious target including the following elements:

(1) supply and use table as working basis, possibly on an annual basis and at least from time to time in great details;

(2) compilation of at least "commodity flows" data (goods and services account by products) annually and fully consistent with national accounts, providing a powerful tool for the calculation and verification of the national accounts;

(3) capability of flexibility for analytical needs, responsiveness to aggregation, more details and rearrangements of flows.

159. If this ideal approach is not possible, mathematical techniques can be used to link benchmark year estimates to partial data for intervening years to keep intact at least aggregated series of annual series.

2. Constant-price estimation

160. <Chapter XVI, Price and Volume Measures> contains a comprehensive description of the decomposition of flows of goods and services into prices and volumes, which is applicable to the constant-price estimation of the input-output framework. In fact, the supply and use tables are the most complete consistent framework for constant price estimation and would provide:

(1) interdependent measures of prices and volumes;

(2) an important check on the numerical consistency and reliability of the entire set of such measures, interlinking values at constant and current prices, value and volume indices and deflators.

161. Constant price measures for gross value added are possible in the input-output framework by using the double deflation method, making residuals from:

(1) deflating the value of output by a price index of output;

(2) deflating the value of intermediate consumption by a price index for these inputs.

162. In most cases, volumes or volume indices might be derived indirectly, but not without carrying out certain plausibility checks. The price component can usually (except when inflation is high) be estimated more reliably than

the volume component, from using price indices (deflators) which tend to be less variable or volatile than the corresponding quantity relatives.

163. The deflation process may be best carried out within the framework of the supply and use table. One possible approach might be to adopt direct deflators for domestic output, imports and exports of each product, while the deflator for national use of each product is derived residually (although the selection of item for which an indirect deflator is to be applied might come out differently).

164. Consumer price indices (CPI) might have a role to play in checking the resulting flows of household consumption expenditure at purchasers' prices. In so doing, it provides a close link between the national accounts deflator of household consumption expenditure and the CPI (implying a consistent use of the CPI).

165. Constant-price estimates also involve other general issues that become particularly important in an input-output (supply and use) context , such as change of base year and use of chain indices. These are dealt with in <chapter XVI, Price and Volume Measures>. Depending upon circumstances and which data are found most suitable for the various purposes, countries might make a choice between two strategies:

(1) A fixed base of Laspeyres type volume measures;

(2) More frequent rebasing, in particular annual chaining, which may especially appeal to countries experiencing a high degree of inflation or serious fluctuations in their economy.

166. Symmetric input-output tables should also be prepared at constant prices, both according to their wide use and because most of the traditional input-output assumptions are related to such tables. They are obtained in the same way as the input-output tables at current prices, i.e., from the supply and use tables at constant prices.

F. Purposes and Uses of Input-Output Data

1. Input-output as a framework

167. In addition to their use for analytical purposes, input-output tables and the concept of input-output might serve various statistical needs:

(1) framework for basic data compilation;

(2) framework for weighting and compilation of index numbers;

(3) framework for assessing quality and completeness;

(4) framework for developing interrelated price and volume measures;

(5) framework for consistency checking.

168. Input-output as a framework for basic data compilation is important in terms of identifying gaps and inconsistencies in basic data to be collected. The integration of input-output with other parts of national accounts is equally important; compilation of input-output tables should not be a separate task without strong ties to economic statistics and national accounts in general.

169. Input-output as a framework for weighting and compilation of index numbers must be viewed from the central role input-output has in The Production Account and Goods and Services Account of the national accounting framework. As a consequence, it becomes an invaluable frame for various purposes such as:

(1) determining the weights, base-year and current-year of the system of index numbers;

(2) selecting interrelated samples for collecting integrated series of quantity, price and value indicators;

(3) selecting samples and weights in the various types of inquiries;

(4) compiling linked and consistent series of index numbers of price, volume and value.

170. Input-output as a framework for assessing quality and completeness is particularly enhanced in national accounting work when basing its compilation on supply and use tables. The needs of national accounts should count heavily when collecting new or altering the design of existing basic statistics. Improvements in basic statistics will inevitably lead to improvements in the reliability of national accounts data.

171. Input-output as a framework for price and volume measures is considered a most complete environment for accurate constant-price calculation. Input-output tables at constant prices form part of the whole statistical system of price and quantity index numbers.

172. Input-output as a framework for consistency checking has been stressed various times throughout this chapter and applies as well to estimation at constant prices. When decomposing into price and volume, it provides yet more checks on plausibility, etc. Price statistics that are available should be applied to the respective product flows of relevance in the accounting framework. This might mean a more sophisticated use of price deflators or extrapolators in the balancing of products.

2. Input-output for analysis

173. Input-output tables are a powerful analytical tool. They are - from supply and use tables through symmetric input-output tables to the inverse tables (see below) - put to use in various kinds of economic analysis. Some of the most important areas in which the input-output framework is used for analytical purposes, are listed below and described briefly:

- analysis of production;
- analysis of structure of demand, export ratios, etc.;
- analysis of employment;
- analysis of prices and costs;
- analysis of imports required;
- analysis of investment and capital;
- analysis of exports;
- analysis of energy;
- analysis of environment;
- sensitivity analysis.

174. In describing these points briefly, the inverse table and the notion of direct and indirect requirements should first be introduced. The input structure in the columns of the input-output table shows what is required of intermediate and other inputs to produce the corresponding output. New production of output starts a long chain of production, since the new inputs also need to be produced, requiring inputs of their own. The Leontief input-output model defines output of each product in terms of the amounts consumed or purchased by other producers and the amounts sold to final uses. This defines a set of structural equations which express the input-output relations in terms of the entries in the table or matrix. It is very useful for analysis to express these relations in terms of coefficients. A coefficient table records the amount of each product used as input per unit of output of the various products. By solving the basic equations, one arrives at the so-called Leontief inverse table which shows the full impact of a given demand for outputs on all the other producers. Thus, the columns of the inverse table show the total input requirements, both direct and indirect, generated by one unit of output.

175. Turning back to the applications, the basic role of input-output analysis is to analyse the link between final demand and industrial output levels. The inverse table could be used to assess the effects on the productive system of a given level of final demand. Employment implications

are equally important in this respect. When using the input-output price model, input-output tables can be used for analysing changes in prices stemming from changes in costs or from changes in taxes or subsidies. The determination of the level of imports is often a vital part of an input-output exercise, particularly in economies where the balance of payments imposes a constraint on their domestic economic policies. There are both the question of direct demand for imports, and secondly, indirect demand for imported inputs from all industries involved directly or indirectly. The input-output framework might be extended to also cover demands for fixed assets, by relating the investment table to output. One of the standard input-output applications is the analysis between exports and the necessary direct and indirect inputs.

176. There has been an increased use of input-output for more structural analysis. Two prominent areas might be mentioned: energy and environment. It is possible to calculate the energy content of the different products in intermediate and final demand, and thereby direct and indirect energy needs from energy matrices, either in physical or value terms. The input-output approach is also used in environmental analysis, as it enables the determination of direct and indirect sources of pollution by linking data on emission in physical terms to the input-output tables. The "pollution" content of final demand can then be calculated.

177. Finally, input-output could also be used for various kinds of sensitivity analysis. This analysis reveals the effects if some variables in the output model are changed. Increased attention has also been devoted to dynamic input-output models. The essential distinction of a dynamic model is that it traces the path of the economy from the base year to the target year, and it may be applied to calculate the requirements of a given final output not only in the current year, but also through direct and indirect capital requirements in all preceding years. Dynamic models look at the future growth path of the economy year by year, and while data and computational limitations presently hinder their practical application, this may be somewhat less of a problem in the future.

TABLE XV.1 SUPPLY AND USE

RESOURCES		TOTAL SUPPLY AT PRODUCERS' PRICES	Trade & transport margins	Taxes on products	Subsidies on products (-)	TOTAL SUPPLY (basic prices)	SUPPLY OF PRODUCTS — OUTPUT OF INDUSTRIES (by ISIC categories) — NON-MARKET					MARKET									TOTAL INDUSTRY	TOTAL ECONOMY	CIF/fob adjustment on imports	IMPORTS	
							Agriculture, hunting, forestry, fishing (A+B)	Real estate (K)	Education, health, social, private household services (M+N+O+P)	Public Admin., defence, compulsory & activity sub. pub. services (L)	TOTAL NON-MARKET	Agriculture, hunting, forestry, fishing (A+B)	Mining and quarrying (C)	Manufacturing, electricity (D+E)	Construction (F)	Wholesale, retail trade, repair motor vehicles & hsehld goods, hotels & restaurants (G+H)	Transport, storage, and communication (I)	Financial intermediation, real estate, other business services (J+K)	Education, health, personal services (M+N+O)	TOTAL MARKET				Goods	Services
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
GOODS AND SERVICES (by CPC sections)																									
1. Agriculture, forestry and fishery products	(0)	126	2	5	-3	122	20	-	-	-	20	51	-	-	-	12	-	2	-	65	85			37	
2. Ores and minerals	(1)	103	2	-	-	101	-	-	-	-	-	-	30	10	-	1	-	-	-	41	41			60	
3. Electricity, gas and water	(17-18)	160	-	5	-	155	-	-	-	-	-	-	2	152	-	-	-	-	-	154	154			1	
4. Manufacturing	(3-4)	2107	74	94	-5	2034	2	-	-	-	2	-	2	1473	11	196	28	7	2	1719	1721			283	
5. Construction work and constructions, land	(5)	221	-	17	-	204	-	-	-	-	-	-	-	7	191	-	5	-	-	203	203			1	
6. Trade services, restaurant & hotel services	(6)	134	-66	3	-	201	-	-	-	-	-	-	-	8	1	79	72	-	-	165	165				36
7. Transport, storage and communication services	(7)	111	-10	5	-	116	-	-	-	-	-	-	-	-	-	21	75	-	-	96	96	a)	-6		26
8. Business services	(8)	847	-	8	-	839	-	100	94	-	194	-	-	24	-	2	3	330	42	402	398	b)	-4		17
9. Community, social and pers. serv. exc. pub. ad.	(9)	232	-	3	-	229	-	-	75	-	75	-	-	1	-	2	2	1	145	151	226				3
10. Public administration	(91)	329	-	1	-	328	-	-	-	326	326	-	-	-	-	-	-	-	-	-	326				2
adjustments:																									
11 cif/fob adjustment on imports		0				0																c)	10	-10	
12. direct purchases abroad by residents		43				43																		20	23
13 TOTAL		4245	0	141	-8	4112	22	100	169	326	617	51	35	1675	203	313	190	340	189	2996	3613		0	392 f)	107

NOTES:

a) Transport services on imports rendered by residents and non-residents
b) Insurance services on imports rendered by residents and non-residents
c) Transport and insurance services on imports rendered by residents and non-residents
d) Including transport services on imports rendered by non-residents
e) Including insurance services on imports rendered by non-residents
f) Imports of individual goods are valued cif. With global fob/cif adjustments, total value of imports of goods is valued fob.
g) Total supply of trade services (136) does not include trade margins (60).
Trade margins which are included in output of wholesale and retail trade in basic prices are allocated by products in column 2.
h) Total supply of transport services does not include transport margins (10). Transport margins which are included in output of transport in basic prices are allocated by products in column 2.
Total supply of transport services also excludes transport services on imports (6) rendered by residents and non-residents which are included in imports by products valued c.i.f..
i) Total supply of business services including insurance services does not include insurance services on imports (4) rendered by residents and non-residents which are included in imports by products valued c.i.f..

TABLE XV.1 (continued)

USE OF PRODUCTS, PURCHASERS' PRICES

USES		TOTAL USES AT PURCHASERS' PRICES		Taxes on products	Subsidies on products		INTERMEDIATE CONSUMPTION OF INDUSTRIES (by ISIC categories) NON-MARKET: Agriculture hunting, forestry fishing (A+B)	Real estate (K)	Education, health, social, private household services (M+N+O+P)	Public Admin., defense, compulsory s.security oth. pblc services (L)	TOTAL NON-MARKET	MARKET: Agriculture hunting, forestry fishing (A+B)	Mining and quarrying (C)	Manufacturing, electricity (D+E)	Construction (F)	Wholesale, retail trade, repair motor vehicles & hshld goods, hotels & restaurants (G+H)	Transport, storage, and communication (I)	Financial intermediation, real estate, other business services (J+K)	Education, health, personal services (M+N+O)	TOTAL MARKET	TOTAL INDUSTRY
		(1)	(2)	(3)	(4)	...	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
GOODS AND SERVICES, (by CPC sections)																					
Total uses																					
1. Agriculture, forestry and fishery products	(0)	126					1	-	1	4	6	2	-	71	-	3	2	4	-	82	88
2. Ores and minerals	(1)	103					-	-	-	-	-	1	3	92	-	-	-	-	-	96	96
3. Electricity, gas and water	(17-18)	160					-	-	3	7	10	2	2	96	1	5	4	3	-	113	123
4. Manufacturing	(2-4)	2167					9	10	24	69	112	19	7	666	84	47	32	21	4	880	992
5. Construction work and constructions, land	(5)	221					-	-	6	12	18	1	2	7	3	1	2	5	1	22	40
6. Trade services, restaurant & hotel services	(6)	136	g)				-	-	1	3	4	1	1	29	1	12	9	4	-	57	61
7. Transport, storage and communication services	(7)	111					-	-	1	6	7	-	1	20	2	24	18	6	-	71	78
8. Business services	(8)	617					-	10	16	26	52	1	1	105	17	32	23	49	3	231	283
9. Community, social and pers. serv. exc. pub. ad.	(9)	232					-	-	4	49	53	1	-	6	-	2	1	6	26	42	95
10. Public administration	(91)	329					-	-	3	27	30	-	-	9	-	1	1	4	1	16	46
adjustments:																					
11. direct purchases abroad by residents		43																			
12. dir. purchases in domestic market by non-residents		0																			
13. TOTAL USES IN PURCHASERS' PRICES		4245					10	20	59	203	292	28	17	1101	108	127	92	102	35	1610	1902
14. TOTAL GROSS VALUE ADDED/GDP				141	-8		12	80	110	123	325	23	18	574	95	186	98	238	154	1386	1711
15. Compensation of employees							-	-	39	72	111	9	13	374	68	111	60	67	137	839	950
16. Taxes less subsidies on production and imports				141	-8		-	-	-	2	2	-2	-2	47	3	-	-6	13	3	56	58
17. Taxes on products				141			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18. Subsidies on products					-8		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19. Other taxes less subsidies on production							-	-	-	2	2	-2	-2	47	3	-	-6	13	3	56	58
20. Mixed income, net							8	-	-	-	8	-	-	-	-	-	-	-	-	-	8
21. Operating surplus, net							-	60	58	29	147	9	4	82	19	61	21	119	11	326	473
22. Consumption of fixed capital							4	20	13	20	57	7	3	71	5	14	23	39	3	165	222
23. Mixed income, gross							12	-	-	-	12	-	-	-	-	-	-	-	-	-	12
24. Operating surplus, gross							-	80	71	49	200	16	7	153	24	75	44	158	14	491	691
25. TOTAL OUTPUT							22	100	169	326	617	51	35	1675	203	313	190	340	189	2996	3613
26. LABOR INPUTS																					
27. GROSS FIXED CAPITAL FORMATION							668	0	664	15000	16332	1390	292	28256	4400	10508	2710	3911	1570	53037	69369
28. STOCKS OF FIXED ASSETS							4	131	8	23	166	8	6	121	7	12	54	22	1	231	397
							47	1683	103	294	2127	97	82	1572	85	155	695	411	18	3115	5242

j) This column may be broken down into gross fixed capital formation by institutional sectors or industries.

TOTAL ECONOMY	EXPORTS		FINAL CONSUMPTION EXPENDITURE						GROSS CAPITAL FORMATION			
			SUB-TOTAL	HOUSE-HOLDS	NON-PROFIT INSTI-TUTIONS	GENERAL GOVERNMENT						
	Goods	Ser-vices			individual	sub-total	collective	individual	sub-total	Gross fixed capital formation	Changes in inventories	Acquisition less disposals of valuables
(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)
	7		30	30	-	-	-	-	1	-	1	-
	6		2	2	-	-	-	-	-1	-	-1	-
	1		36	36	-	-	-	-	-	-	-	-
	422		577	567	-	10	10	-	176	161	5	10
	6		3	3	-	-	-	-	172	172	-	-
		38	37	37	-	-	-	-	-	-	-	-
		19	14	14	-	-	-	-	-	-	-	-
		8	262	255	-	7	7	-	64	64	-	-
		3	134	50	14	70	-	70	-	-	-	-
		1	282	9	-	273	143	130	-	-	-	-
			43	43								
	20	9	-29	-29								
	462	78	1391	1017	14	360	160	200	412	397	5	10
1844												
950												
191												
141												
-8												
58												
8												
473												
222												
12												
601												

TABLE XV 2

TABLE OF TRADE & TRANSPORT MARGINS, TAXES AND SUBSIDIES ON PRODUCTS

USES	TOTAL USES	INTERMEDIATE CONSUMPTION OF INDUSTRIES (by ISIC categories)													TOTAL INDUSTRY	EXPORTS of goods & services	FINAL CONSUMPTION EXPENDITURE					GROSS CAPITAL FORMATION			
		NON-MARKET					MARKET										SUB-TOTAL	NON-PROFIT INSTITUTIONS		GENERAL GOVERNMENT					
		Agriculture, hunting, forestry, fishing (A+B)	Real estate (K)	Education, health, social, household services (M+N+O+P)	Public Admin. and defence; mand. soc. sib. public services (L)	TOTAL NON-MARKET	Agriculture, hunting, forestry, fishing (A+B)	Mining and quarrying (C)	Manufacturing, elect. water (D+E)	Construction (F)	Wholesale retail trade Rep. motor veh. hotels, restaurants (G+H)	Transp. Storage and com. services (I)	Financial insurance, real est. business services (J+K)	Education, health, social, personal services (M+N+O)	TOTAL MARKET				Individual	sub-total	collective	indirect	Gross fixed capital formation	Changes in inventories	Acquisitions less disposals of valuables
	(1)	(6)	(7)	(8)	(9)	(10)	(14)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)
GOODS AND SERVICES (by CPC version)																											
Total uses																											
1. Agriculture, forestry and fishery products																											
Trade margins																											
Taxes																											
Subsidies																											
2. Ores and minerals																											
Trade margins																											
Taxes																											
3. Electric city, gas and water																											
Trade margins																											
Taxes																											
4. Manufacturing																											
Trade margins																											
Transport margins																											
Taxes																											
Subsidies																											
5. Construction work and construction, land																											
Taxes																											
6. Trade services, restaurant & hotel services																											
Taxes																											
7. Transport, storage and communication services																											
Taxes																											
8. Business services																											
Taxes																											
9. Community, social and pers. serv. ser. pub. adm.																											
Taxes																											
10. Public administration																											
Taxes																											
adjustments																											
11. direct purchases abroad by residents																											
12. dir. purchases in domestic market by non residents																											
13. TOTAL TRADE MARGINS																											
14. TOTAL TRANSPORT MARGINS																											
15. TOTAL TAXES ON PRODUCTS																											
16. TOTAL SUBSIDIES ON PRODUCTS																											

TABLE XV.3

USE TABLE, BASIC PRICES

USES	TOTAL USES AT BASIC PRICES	Trade & transport margins	Taxes less subsidies on products	INTERMEDIATE CONSUMPTION OF INDUSTRIES (by ISIC categories)													TOTAL INDUSTRY
				NON-MARKET					MARKET								
				Agricult. hunting, forestry fishing (A+B)	Real estate (L)	Education, health, social, household services (M+N+O+P)	Pbc. admin. defence, social sec. oth. pblc services (L)	TOTAL NON-MARKET	Agricult. hunting, forestry fishing (A+B)	Mining and quarrying (C)	Manufacturing, electricity (D+E)	Construction (F)	Wholesale retail trde, rep. motor vehicles, hotels, restaurants (G+H)	Transp. storage and communicat. (I)	Financial intermediation, real est. oth. business services (J+K)	Education health, social, personal services (M+N+O)	TOTAL MARKET	
	(1)	(2)	(3)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
GOODS AND SERVICES, (by CPC sections)																		
Total uses																		
1. Agriculture, forestry and fishery products (0)	122			1	-	1	4	6	2		70	-	3	2	4	-	81	87
2. Ores and minerals (1)	101			-	-	-	-	-	1	3	90	-	-	-	-	-	94	94
3. Electricity, gas and water (17-18)	155			-	-	3	7	10	2	2	92	1	5	4	3	-	109	119
4. Manufacturing (2-4)	2004			9	10	24	64	107	17	7	645	77	47	30	21	4	818	925
5. Construction work and constructions, land (5)	204			-	-	6	12	18	1	2	7	3	1	2	5	1	22	40
6. Trade services, restaurant & hotel services (6)	201			-	-	1	7	8	2	1	51	4	12	11	4	-	85	93
7. Transport, storage and communication services (7)	116			-	-	1	6	7	-	1	23	2	22	18	6	-	72	79
8. Business services (8)	609			-	10	16	26	52	1	1	100	17	32	23	49	3	226	278
9. Community, social and pers. serv. exc. pub. adm. (9)	229			-	-	4	49	53	1	-	6	-	2	1	6	26	42	95
10. Public administration (91)	328			-	-	3	27	30	-	-	9	-	1	1	4	1	16	46
adjustments:																		
11. direct purchases abroad by residents	43																	
12. dir. purchases on domestic market by non-residents	0																	
13. TOTAL USES AT BASIC PRICES	4112			10	20	59	202	291	27	17	1083	104	125	92	102	35	1560	1836
14. TAXES LESS SUBSIDIES ON PRODUCTS	133			-	-	-	1	1	1	-	38	4	2	-	-	-	45	46
16. TOTAL USES AT PURCHASERS' PRICES	4245			10	20	59	203	292	28	17	1101	108	127	92	102	35	1640	1902
17. TOTAL GROSS VALUE ADDED/GDP			133	12	80	110	123	325	23	18	574	95	186	98	238	154	1386	1711
18. Compensation of employees				-	-	39	72	111	9	13	374	68	111	60	67	137	839	950
19. Taxes less subsidies on production and imports			133	0	0	0	2	2	2	-2	67	3	0	-6	13	3	56	58
20. Taxes on products			141															
21. Subsidies on products			-8															
22. Other taxes less subsidies on production				-	-	-	2	2	2	-2	67	3	-	6	13	3	56	58
23. Mixed income, net				8	-	-	-	8	-	-	-	-	-	-	-	-	-	8
24. Operating surplus, net				-	60	58	29	147	9	4	82	19	61	21	119	11	326	473
25. Consumption of fixed capital				4	20	13	20	57	7	3	71	5	14	23	39	3	165	222
26. Mixed income, gross				12	-	-	-	12	-	-	-	-	-	-	-	-	-	12
27. Operating surplus, gross				-	80	71	49	200	16	7	153	24	75	44	158	14	491	691
28. TOTAL OUTPUT				22	100	169	326	617	51	35	1675	203	313	190	360	189	2996	3613

TOTAL ECONOMY	EXPORTS of goods & services	FINAL CONSUMPTION EXPENDITURE						GROSS CAPITAL FORMATION			
		SUB-TOTAL	HOUSEHOLDS	NON-PROFIT INSTITUTIONS	GENERAL GOVERNMENT			sub-total	Gross fixed capital formation	Changes in inventories	Acquisition less disposals of valuables
				Individual	sub-total	collective	individual				
(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
	7	27	27	-	-	-	-	1	-	1	-
	6	2	2	-	-	-	-	-1	-	-1	-
	1	35	35	-	-	-	-	-	-	-	-
	396	514	504		10	10	-	169	154	5	10
	6	3	3	-	-	-	-	155	155	-	-
	52	53	53	-	-	-	-	3	3	-	-
	21	16	16	-	-	-	-	-	-	-	-
	7	260	253	-	7	7	-	64	64	-	-
	3	131	47	14	70	-	70	-	-	-	-
	1	281	8	-	273	143	130	-	-	-	-
	29	43 -29	43 -29								
	529	1336	962	14	360	160	200	391	376	5	10
	11	55	55	-	-	-	-	21	21	-	-
	540	1391	1017	14	360	160	200	412	397	5	10
1844											
950											
191											
141											
-8											
58											
8											
473											
222											
12											
691											

TABLE XV.4

INPUT-OUTPUT SYMMETRIC TABLE, BASIC PRICES
PRODUCT BY PRODUCT

USES		INTERMEDIATE CONSUMPTION HOMOGENEOUS UNITS OF PRODUCTION										TOTAL INDUSTRY	FINAL CONSUMPTION EXPENDITURE					
		Agriculture, fishery, forestry products	Ores and minerals	Electricity, gas, water	Manufacturing	Construction work construction, land	Trade services, restaurant, hotels	Transport, storage and communicat. services	Business services	Community social, personal services	Public admin. and defense, oth. publ. services		SUB TOTAL	HOUSEHOLDS	NON-PROFIT INSTITUTIONS	GENERAL GOVERNMENT		
															Individual	sub-total	collective	individual
		(0)	(1)	(17-18)	(2-4)	(5)	(6)	(7)	(8)	(9)	(91)							
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
	GOODS AND SERVICES, (by CPC sections)																	
	Total uses																	
1.	Agriculture, forestry and fishery products	(0)	3	-	6	64	-	2	1	6	1	4	87	27	27	-	-	-	-
2.	Ores and minerals	(1)	1	3	8	80	1	-	-	1	-	-	94	2	2	-	-	-	-
3.	Electricity, gas and water	(17-18)	2	2	8	86	1	3	2	7	1	7	119	35	35	-	-	-	-
4.	Manufacturing	(2-4)	27	10	56	581	76	27	15	59	10	64	925	514	504		10	10	-
5.	Construction work and constructions, land	(5)	1	2	1	7	3	1	1	9	3	12	40	3	3	-	-	-	-
6.	Trade services, restaurant & hotel services	(6)	2	1	5	54	4	9	5	6	0	7	93	53	53	-	-	-	-
7.	Transport, storage and communication services	(7)	2	1	2	37	2	13	8	8	0	6	79	16	16	-	-	-	-
8.	Business services	(8)	2	2	9	114	17	18	11	71	8	26	278	260	253	-	7	7	-
9.	Community, social and pers. serv. exc. pub. adm.	(9)	1	-	1	7	-	1	1	14	21	49	95	131	47	14	70	-	70
10.	Public administration	(91)	-	-	1	9	-	1	-	8	0	27	46	281	8	-	273	143	130
	adjustments:																		
11.	direct purchases abroad by residents													43	43				
12.	dir. purchases in domestic market by non-residents													-29	-29				
13.	cif/fob adjustment																		
14.	TOTAL USES AT BASIC PRICES		41	21	97	1039	104	75	44	189	44	202	1856	1336	962	14	360	160	200
15.	Taxes less subsidies on products		1	-	3	35	4	1	-	1	-	1	46	55	55				
16.	TOTAL USES AT PURCHASERS' PRICES		42	21	100	1074	108	76	44	190	44	203	1902	1391	1017	14	360	160	200
17.	TOTAL GROSS VALUE ADDED/GDP		43	20	54	647	95	89	52	406	182	123	1711						
18.	Compensation of employees		13	14	35	413	67	55	31	111	139	72	950						
19.	Taxes less subsidies on production and imports		-2	-1	4	41	3	-3	-2	15	1	2	58						
20.	Taxes on products		-	-	-	-	-	-	-	-	-	-	-						
21.	Sunsidies on products		-	-	-	-	-	-	-	-	-	-	-						
22.	Other taxes less subsidies on production		-2	-1	4	41	3	-3	-2	15	1	2	58						
23.	Mixed income, net		8	-	-	-	-	-	-	-	-	-	8						
24.	Operating surplus, net		12	4	8	118	19	24	12	212	35	29	473						
25.	Consumption of fixed capital		12	3	7	75	6	13	11	68	7	20	222						
26.	Mixed income, gross		12	-	-	-	-	-	-	-	-	-	12						
27.	Operating surplus, gross		20	7	15	193	25	37	23	280	42	49	691						
28.	PRODUCT OUTPUT AT BASIC PRICES		85	41	154	1721	203	165	96	596	226	326	3613						

GROSS CAPITAL FORMATION				EXPORTS FOB	IMPORTS	C/f/fob adjustment	PRODUCT OUTPUT at basic prices	TAXES less SUBSIDIES on products	TOTAL ECONOMY
sub-total	Gross fixed capital formation	Changes in inventories	Acquisition less disposals of valuables						
(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
1	-	1	-	7	-37				
1	-	-1	-	6	-60		85		85
-	-	-	-	1	-1		41		41
169	154	5	10	396	-283		154		154
155	153	-	-	6	-1		1721		1721
3	3	-	-	52	-36		203		203
-	-	-	-	21	-26		165		165
64	64	-	-	7	-17	6	96		96
-	-	-	-	3	-3	4	596		596
-	-	-	-	1	-2		226		226
							326		326
					-43				
				29	10	-10			0
391	376	5	10	529	-499				0
21	21			11					3613
412	397	5	10	540	-499	0			133
									3746
								133	1844
									950
								141	141
								-8	-8
									58
									8
									473
									222
									12
									691

TABLE XV.5

IMPORT MATRIX, BASIC PRICES (C.I.F.)

USES	INTERMEDIATE CONSUMPTION HOMOGENEOUS UNITS OF PRODUCTION										TOTAL INDUSTRY	FINAL CONSUMPTION EXPENDITURE						GROSS CAPITAL FORMATION				c.i.f/f.o.b. adjustment	TOTAL IMPORTS
	Agriculture, fishery, forestry products	Ores and minerals	Electricity, gas, water	Manufacturing	Construction work Construction, land	Trade services, restaurant, Hotels	Transport, storage and communication services	Business servs	Community social, personal services	Public admin. and defence, oth. publ. services		SUB TOTAL	HOUSEHOLDS	NON-PROFIT INSTITUTIONS	GENERAL GOVERNMENT			sub-total	Gross fixed capital formation	Changes in inventories	Acquisition less disposals of valuables		
														Individual	sub-total	collective	individual						
	(0)	(1)	(17-18)	(2-4)	(5)	(6)	(7)	(8)	(9)	(91)													
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
GOODS AND SERVICES, (by CPC sections)																							
Total uses																							
1. Agriculture, forestry and fishery products	(0)	-	-	-	27	-	-	-	-	-	-	27	10	10	-	-	-	-	-	-	-		37
2. Ores and minerals	(1)	-	-	-	60	-	-	-	-	-	-	60	0	0	-	-	-	-	-	-	-		60
3. Electricity, gas and water	(17-18)	-	-	-	1	-	-	-	-	-	-	1	0	0	-	-	-	-	-	-	-		1
4. Manufacturing	(2-4)	-	-	10	85	5	-	-	-	-	-	100	100	100	-	-	-	-	-	-	-		200
5. Construction work and constructions, land	(5)	-	-	-	-	-	-	-	-	-	-	100	100	100	-	-	-	-	-	-	-		1
6. Trade services, restaurant & hotel services	(6)	-	-	-	15	-	3	3	-	-	-	0	0	0	-	-	-	-	1	1	-		282
7. Transport, storage and communication services	(7)	-	-	-	10	-	5	-	1	-	-	21	15	15	-	-	-	-	-	-	-		1
8. Business services	(8)	-	-	-	5	5	2	-	5	-	-	16	10	10	-	-	-	-	-	-	-		36
9. Community, social and pers. serv. exc. pub. adm.	(9)	-	-	-	-	-	-	-	-	-	-	17	0	0	-	-	-	-	-	-	-		28
10. Public administration	(91)	-	-	-	-	-	-	-	-	-	-	0	0	0	-	-	-	-	-	-	-		17
adjustments												0	2	2	-	-	-	-	-	-	-		5
11. direct purchases abroad by residents																							2
12. c.i.f/f.o.b. adjustment													43	43									43
13. TOTAL IMPORTS	0	0	10	203	10	10	3	6	0	0	242	183	183	0	0	0	0	84	74	0	10	-10	-10
																						-10	499

TABLE XV.6

INPUT-OUTPUT SYMMETRIC TABLE, BASIC PRICES

PRODUCT BY PRODUCT

WITH IMPORTED RESOURCES SEPARATED FROM DOMESTIC RESOURCES

USES		INTERMEDIATE CONSUMPTION OF INDUSTRIES HOMOGENEOUS UNITS OF PRODUCTION										TOTAL INDUSTRY	FINAL CONSUMPTION EXPENDITURE					
		Agriculture fishery, forestry products (0)	Ores and minerals (1)	Electricity, gas, water (17-18)	Manufacturing (2-4)	Construction work construction, land (5)	Trade services, restaurants, hotels (6)	Transport, storage and communicat. services (7)	Business services (9)	Community, social, personal services (9)	Public admin. and defense, oth. publ. services (91)		SUB-TOTAL	HOUSEHOLDS	NON-PROFIT INSTITUTIONS	GENERAL GOVERNMENT		
															Individual	sub-total	collective	individual
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
	GOODS AND SERVICES, (by CPC sections)																	
	Total uses																	
1.	Agriculture, forestry and fishery products	(0)	3	-	6	37	-	2	1	6	2	3	60	17	17	-	-	-	-
2.	Ores and minerals	(1)	1	3	8	20	1	-	-	1	-	-	34	2	2	-	-	-	-
3.	Electricity, gas and water	(17-18)	2	2	8	85	1	3	2	7	3	5	118	35	35	-	-	-	-
4.	Manufacturing	(2-4)	27	10	46	496	71	27	15	59	31	43	825	414	404	-	10	10	-
5.	Construction work and constructions, land	(5)	1	2	1	7	3	1	1	9	7	8	40	3	3	-	-	-	-
6.	Trade services, restaurant & hotel services	(6)	2	1	5	39	4	6	2	6	2	5	72	38	38	-	-	-	-
7.	Transport, storage and communication services	(7)	2	1	2	27	2	8	8	7	2	4	63	6	6	-	-	-	-
8.	Business services	(8)	2	2	9	109	12	16	11	66	17	17	261	260	253	-	7	7	-
9.	Community, social and pers. serv. exc. pub. adm.	(9)	1	-	1	7	-	1	1	14	20	50	95	128	44	14	70	-	70
10.	Public administration	(91)	-	-	1	9	-	1	-	8	9	18	46	279	6	-	273	143	130
	adjustments:													-29	-29				
11.	dir. purchases in domestic market by non-residents																		
12.	IMPORTS		-	-	10	203	10	10	3	6	-	-	242	183	183	-	-	-	-
13.	TOTAL USES at basic prices		41	21	97	1039	104	75	44	189	93	153	1856	1336	962	14	360	160	200
14.	Taxes less subsidies on products		1	0	3	35	4	1	0	1	0	1	46	55	55				
15.	TOTAL USES at purchasers' prices		42	21	100	1074	108	76	44	190	93	154	1902	1391	1017	14	360	160	200
16.	TOTAL GROSS VALUE ADDED/GDP		43	20	54	647	95	89	52	406	133	172	1711						
17.	Compensation of employees		13	14	35	413	67	55	31	111	73	138	950						
18.	Taxes on products																		
19.	Subsidies on products																		
20.	Other taxes less subsidies linked to production		-2	-1	4	41	3	-3	2	15	2	1	58						
21.	Mixed income, net		8	-	-	-	-	-	-	-	-	-	8						
22.	Operating surplus, net		12	4	8	118	19	24	12	212	44	20	473						
23.	Consumption of fixed capital		12	3	7	75	6	13	11	68	14	13	222						
24.	Mixed income, gross		12	-	-	-	-	-	-	-	-	-	12						
25.	Operating surplus, gross		20	7	15	193	25	37	23	280	58	33	691						
26.	PRODUCT OUTPUT at basic prices		85	41	154	1721	203	165	96	596	226	326	3613						

GROSS CAPITAL FORMATION				EXPORTS	Cif/fob adjust-ment	PRODUCT OUTPUT at Basic Prices	TAXES less SUBSIDIES on products	TOTAL ECONOMY
sub-total	Gross fixed capital forma-tion	Changes in inven-tories	Acquisi-tion less disposals of valuables					
(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1	-	1	-	7		85		85
-1	-	-1	-	6		41		41
0	-	-	-	1		154		154
86	81	5	-	396		1721		1721
154	154	-	-	6		203		203
3	3	-	-	52		165		165
-	-	-	-	21	6	96		96
64	64	-	-	7	4	596		596
-	-	-	-	3		226		226
-	-	-	-	1		326		326
				29				
84	74	-	10		-10			. 499
391	376	5	10	529				4112
21	21			11				133
412	397	5	10	540	0			4245
							133	1844
								950
							141	141
							-8	-8
								58
								8
								473
								222
								12
								691

TABLE XV.7

VALUE ADDED CROSS-CLASSIFIED BY INDUSTRIES AND INSTITUTIONAL SECTORS

	Trade & transport margins	Taxes less subsidies on products	INDUSTRIES (by ISIC categories) NON-MARKET					MARKET									TOTAL INDUSTRY	TOTAL ECONOMY
			Agricult. hunting, forestry fishing (A+B)	Real estate (K)	Education, health, social, household services (M+N+O+P)	Pbc. admi. defense, social sec. oth. pblic services (L)	TOTAL NON-MARKET	Agricult. hunting, forestry fishing (A+B)	Mining and quarrying (C)	Manufac-turing, elec-tricity (D+E)	Cons-truc tion (F)	Wholesale retail trds, rep. motor vehicles, hotels, restaurants (G+H)	Transp. storage and comm-unicat. (I)	Financial intermediation, real est. oth. business services (J+K)	Education health, social, personal services (M+N+O)	TOTAL MARKET		
	...(2)	(3)..	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1. NON FINANCIAL CORPORATIONS																		
1.1 TOTAL GROSS VALUE ADDED							0	21	18	571	95	182	98	139	154	1278	1278	1278
1.2 Compensation of employees																		
1.3 Taxes less subsidies on production and imports																		
1.4 Taxes on products																		
1.5 Subsidies on products																		
1.6 Other taxes less subsidies on production																		
1.7 Operating surplus, net																		
1.8 Consumption of fixed capital																		
1.9 Operating surplus, gross																		
2. FINANCIAL CORPORATIONS																		
2.1 TOTAL GROSS VALUE ADDED							0							99		99	99	99
2.2 Compensation of employees																		
2.3 Taxes less subsidies on production and imports																		
2.4 Taxes on products																		
2.5 Subsidies on products																		
2.6 Other taxes less subsidies on production																		
2.7 Operating surplus, net																		
2.8 Consumption of fixed capital																		
2.9 Operating surplus, gross																		
3. GENERAL GOVERNMENT																		
3.1 TOTAL GROSS VALUE ADDED					77	123	200									0	200	200
3.2 Compensation of employees																		
3.3 Taxes less subsidies on production and imports																		
3.4 Taxes on products																		
3.5 Subsidies on products																		
3.6 Other taxes less subsidies on production																		
3.7 Operating surplus, net																		
3.8 Consumption of fixed capital																		
3.9 Operating surplus, gross																		
4. NON-PROFIT INSTITUTIONS SERVING HOUSEHOLDS																		
4.1 TOTAL GROSS VALUE ADDED					33		33									0	33	33
4.2 Compensation of employees																		
4.3 Taxes less subsidies on production and imports																		
4.4 Taxes on products																		
4.5 Subsidies on products																		
4.6 Other taxes less subsidies on production																		
4.7 Operating surplus, net																		
4.8 Consumption of fixed capital																		
4.9 Operating surplus, gross																		
5. HOUSEHOLDS SECTOR																		
5.1 TOTAL GROSS VALUE ADDED			12	80			92	2		3		4				9	101	101
5.2 Compensation of employees																		
5.3 Taxes less subsidies on production and imports																		
5.4 Taxes on products																		
5.5 Subsidies on products																		
5.6 Other taxes less subsidies on production																		
5.7 Mixed income, net																		
5.8 Operating surplus, net																		
5.9 Consumption of fixed capital																		
5.1 Operating surplus, gross																		
6. TOTAL ECONOMY																		
6.1 TOTAL GROSS VALUE ADDED/GDP		133	12	80	110	123	325	23	18	574	95	186	98	238	154	1386	1711	1844
6.2 Compensation of employees																		
6.3 Taxes less subsidies on production and imports																		
6.4 Taxes on products																		
6.5 Subsidies on products																		
6.6 Other taxes less subsidies on production																		
6.7 Mixed income, net																		
6.8 Operating surplus, net																		
6.9 Consumption of fixed capital																		
6.1 Operating surplus, gross																		